Pharm.

AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

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International Aerosol Exhibit
PI Aerosol Symposium
FDA Drug Applications
The Peerless Tube Story
CSMA Views on Net Weights

JULY, 1960

A New Insecticide from WARF

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*Proposed generic name.

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WARF

Wisconsin Alumni Research Foundation

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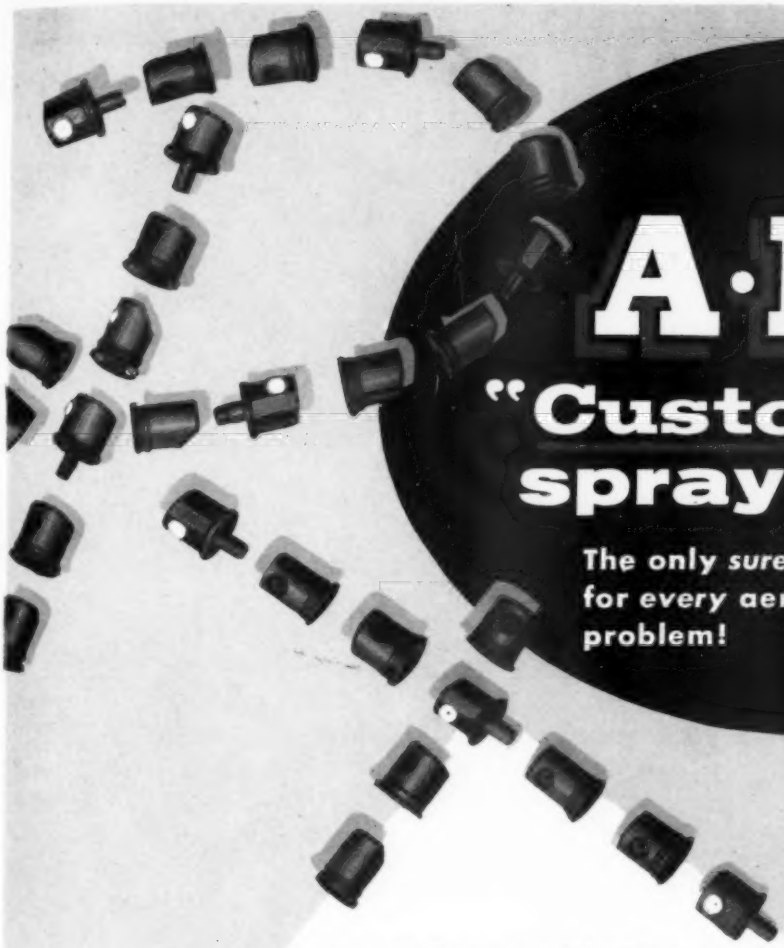

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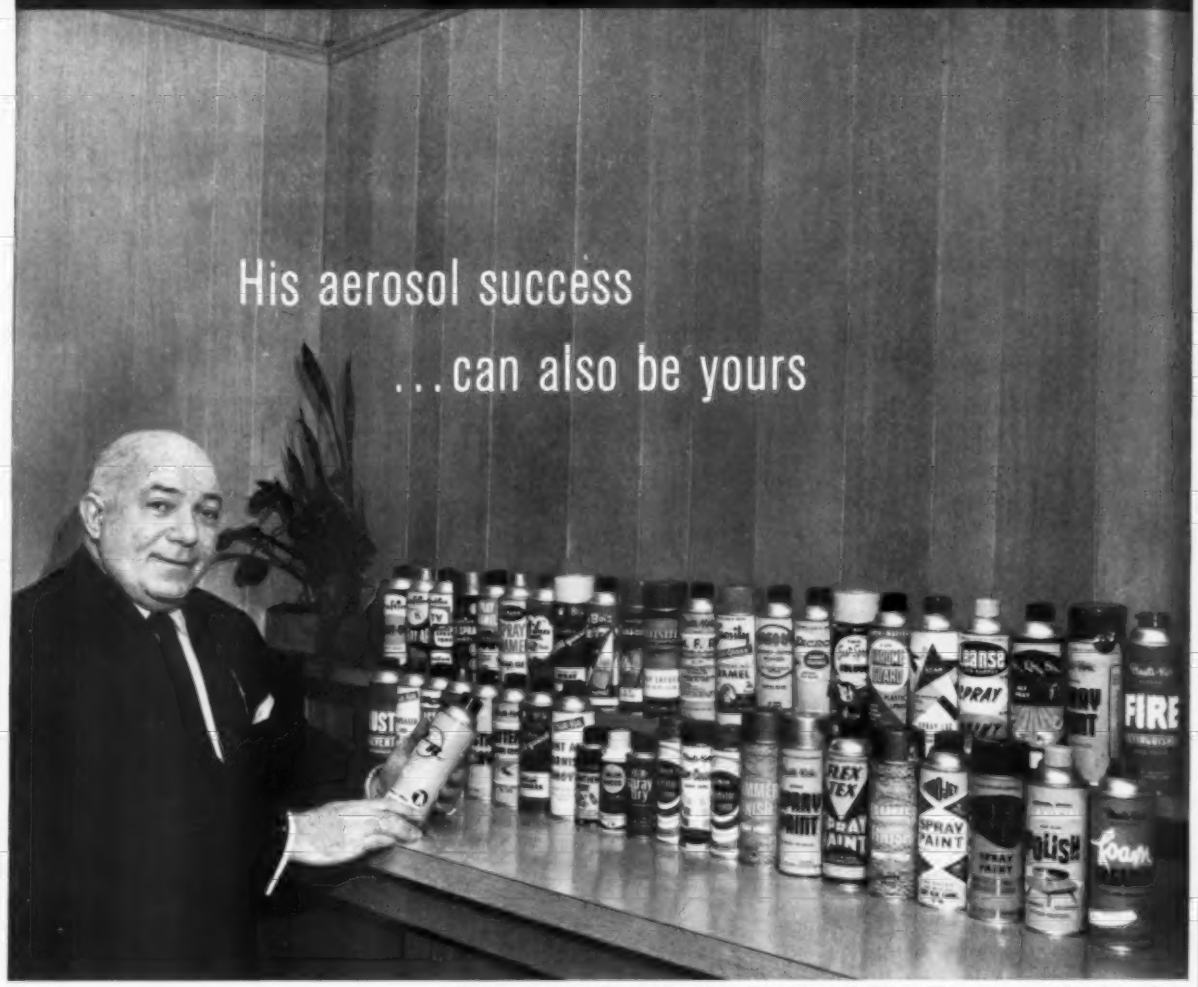

Elias Shapiro, Executive Vice President of Plasti-Kote, Inc., and a few of the more than 500 aerosol products packaged by the firm for its own and customer use.

How do you make sure your new aerosol product reaches the market without a hitch? One good answer: Go to a contract packager like Plasti-Kote, Inc., of Cleveland, which has successfully formulated and packaged its own products. Marketer of scores of aerosol paints, finishes and similar products under its own name, Plasti-Kote also packages hundreds of different aerosol products for a long list of customers.

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THIS MONTH'S COVER

T. W. Schmitt, executive vice-president of Peerless Tube Co., holds the latest pharmaceutical product to be packaged in one of his company's one-piece aerosol containers. "Decaspray" is the trade name given new spray form of "Decadron," a product of Merck, Sharp & Dohme Division of Merck & Co., Chicago. Product is a topical prescription item for numerous dermatological ailments, including poison ivy. Custom filler is Stalfort-Pressure-Pak. For further details on Peerless and the aluminum container, see the story on page 20.

JULY, 1960 VOL. 5, No. 7

AEROSOL AGE

The magazine of pressure packaging

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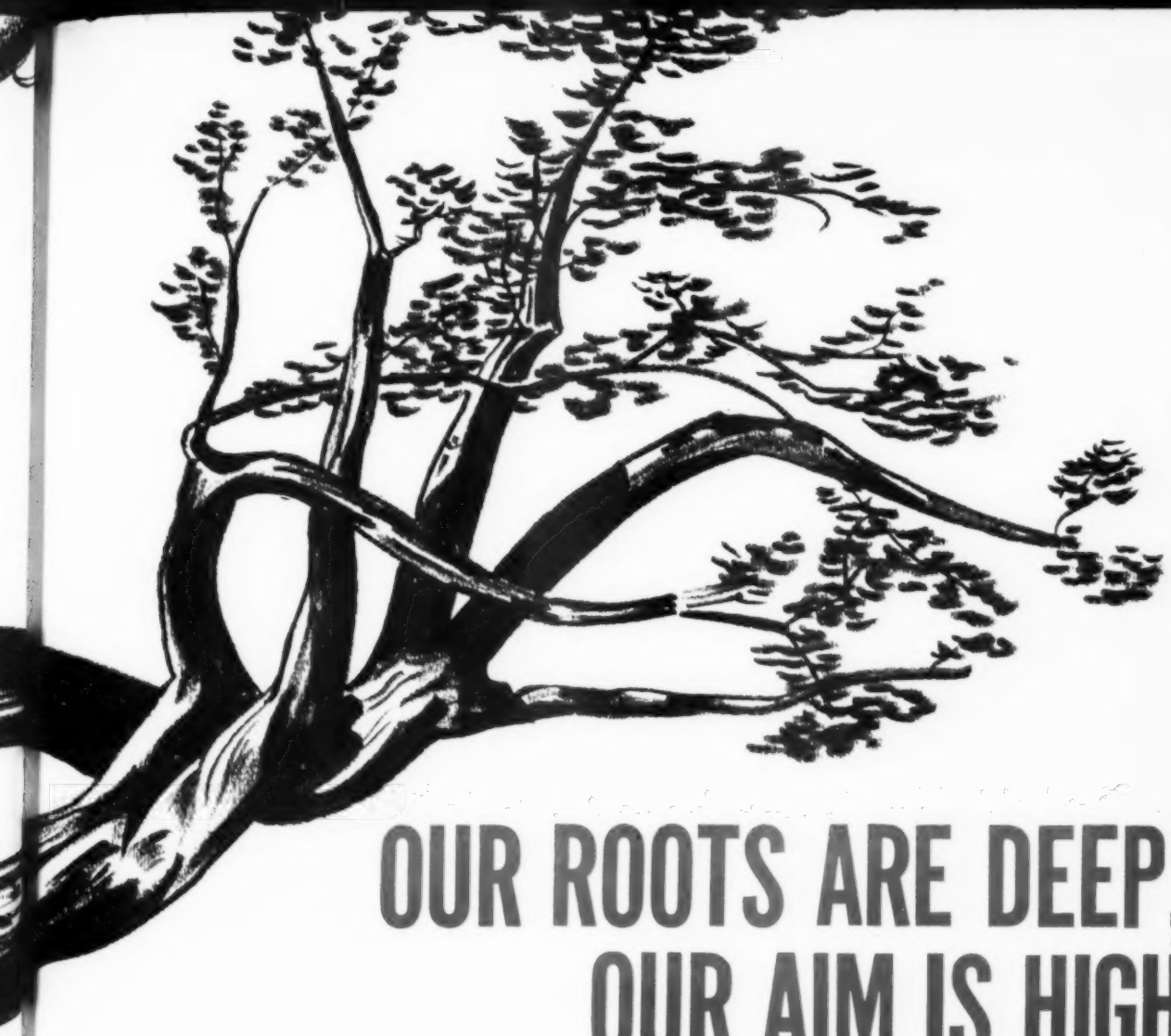

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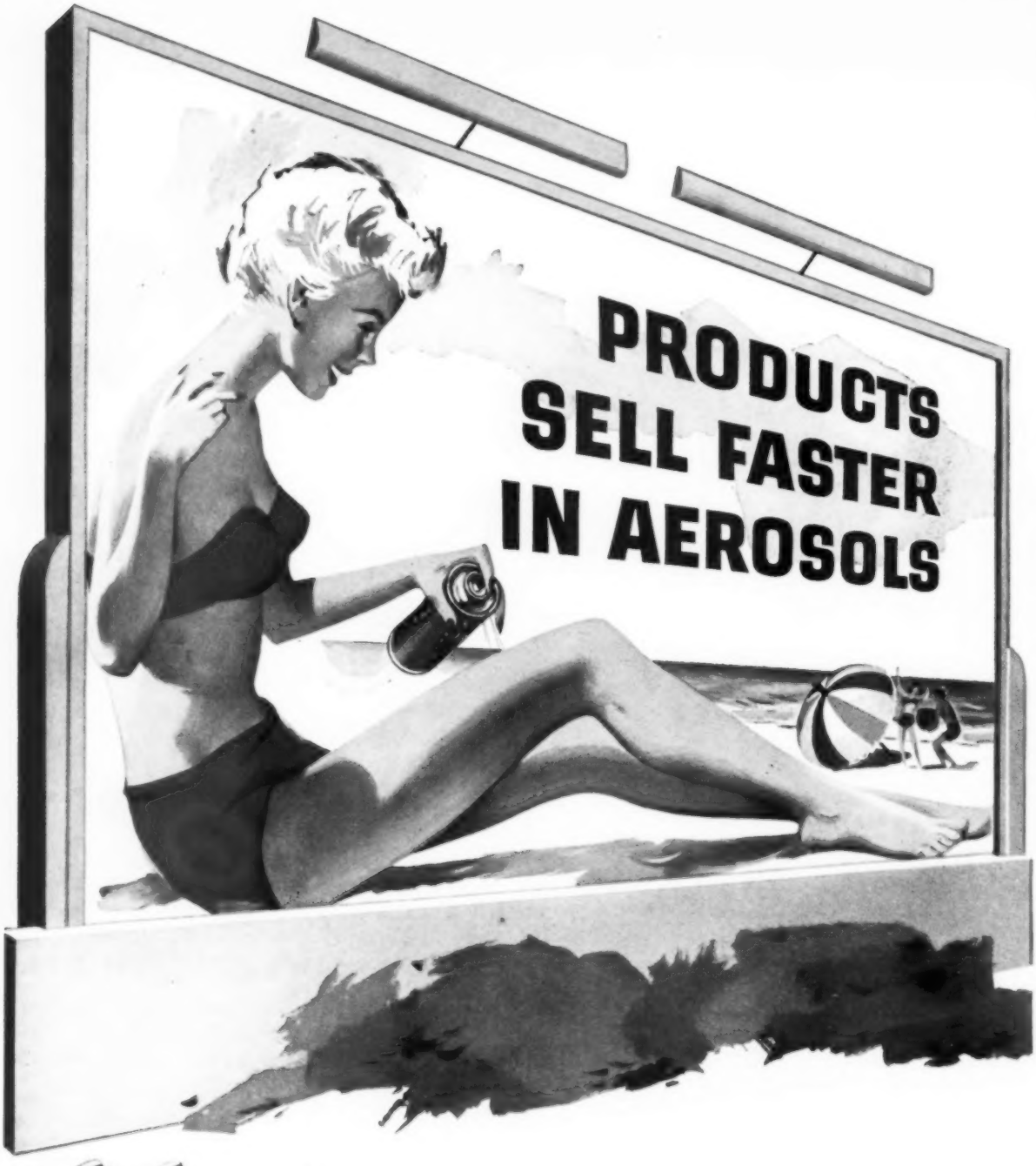

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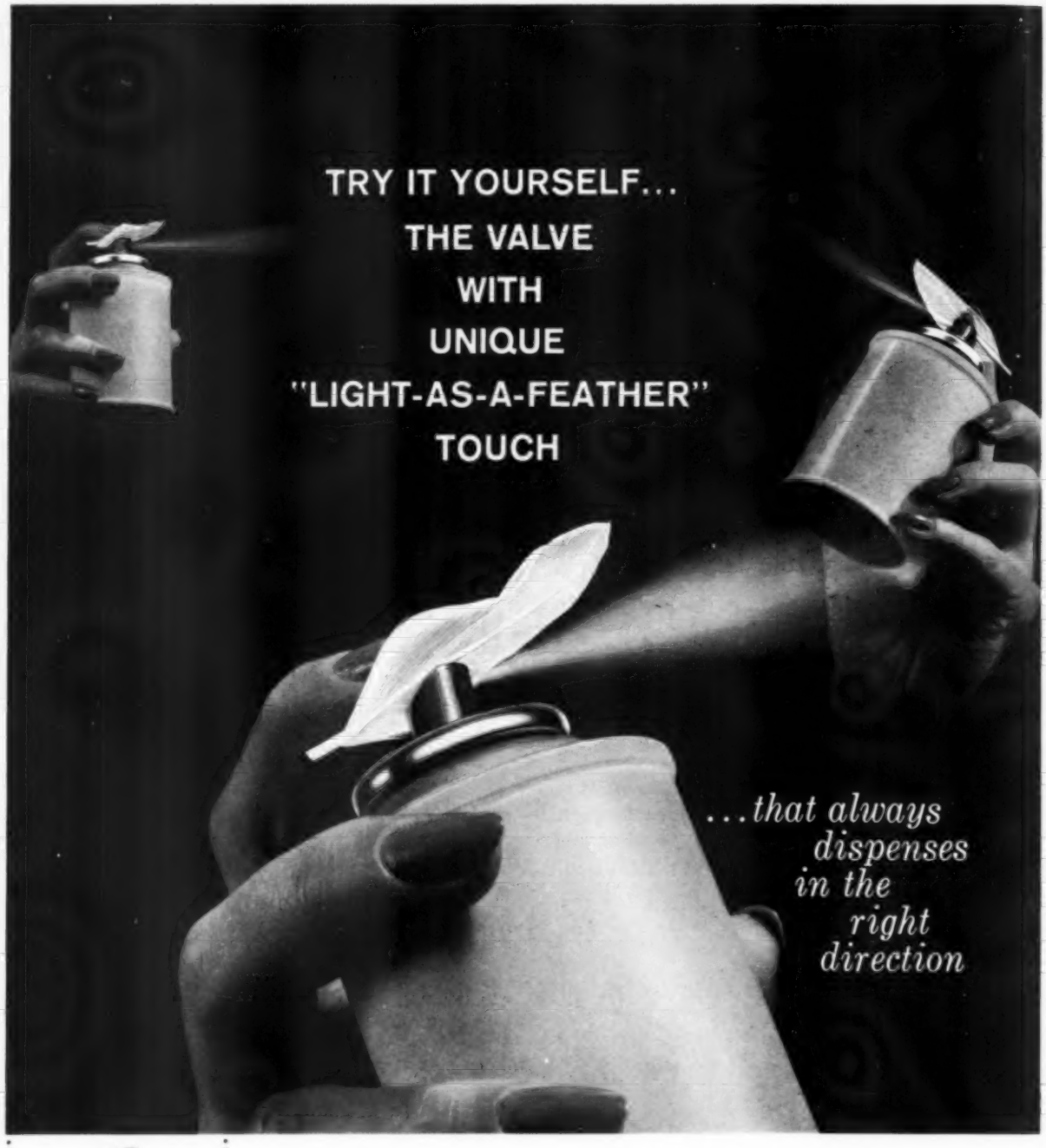

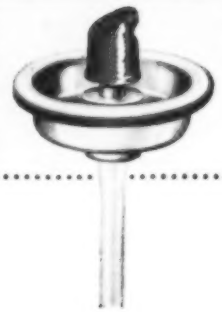

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INDUSTRY MEETING CALENDAR

Western Packaging and Materials Handling Exposition, Pan Pacific Auditorium, Los Angeles.....July 19-21

Chemical Exposition U.S.A., 1960, Statler-Hilton Hotel, New York City .....Sept. 3-15

Society of Cosmetic Chemists, N. Y. Chapter, Hotel New Yorker, New York .....Sept. 7

Society of Cosmetic Chemists, annual seminar, The Drake Hotel, Chicago. .....Sept. 15-16

Chemical Specialties Manufacturers Association, Second Golf Outing, Medinah Country Club, Chicago .....Sept. 20

Drug, Cosmetic & Sundry Show of Pharmaceutical Council of Greater New York, Trade Show Building, New York .....Sept. 25-27

Chemical Specialties Mfrs. Assn., Meeting of Board of Governors, Division Executive Boards, and Committees, Hotel duPont, Wilmington, Del.....Oct. 3-5

Society of Cosmetic Chemists, N. Y. Chapter, Hotel New Yorker, New York .....Oct. 5

French Packaging Institute, First International Packaging Machinery Show, Paris, France.....Oct. 14-23

Canadian Manufacturers of Chemical Specialties Association, 3rd annual convention, Queen Elizabeth Hotel, Montreal....Oct. 24-26.

National Paint, Varnish and Lacquer Association, 73rd annual meeting, Drake Hotel, Chicago.....Oct. 27-29

Society of Cosmetic Chemists, N. Y. Chapter, Hotel New Yorker, New York .....Nov. 2

Toilet Goods Association, scientific section, fall meeting, Waldorf Astoria Hotel.....Nov. 30

Chemical Specialties Manufacturers Assn. 47th annual meeting, Hollywood Beach Hotel, Hollywood, Fla. .....Dec. 3-9

Chemical Specialties Manufacturers Association, Meeting of Board of Governors, Division Executive Boards and Committees, Hotel Peabody, Memphis, Tenn. March 8-9, 1961

National Packaging Exposition and National Packaging Conference of American Management Association, Exposition Center, Chicago.....April 10-13, 1961

- **The Peerless Tube Story** . . . Whither goest the aluminum aerosol container? In this illustrated story, beginning on page 20, **Aerosol Age** visits the production line and laboratory of a leading supplier of one-piece aluminum aerosol cans. Included are the views of the top executives in the company on the future of the aerosol in that type of container.

- **Packaging Institute Holds Aerosol Symposium** . . . On page 24 is a subject-by-subject, controversy-by-controversy coverage of what happens when a group of aerosol experts are gathered together and bombarded with some tricky technical questions, most of which are perennially thrown at aerosol industry representatives.

- **The Market Potential for Pharmaceutical Aerosols** . . . In what is likely the most significant paper ever presented on the subject, Henry Holloway of General Chemical tells the pharmaceutical and aerosol industries what they must do to promote the aerosol package. Complete paper from the CSMA meeting appears on page 27.

- **Aerosols and the FDA** . . . Continuing its recently accelerated coverage of pharmaceutical aerosols, **Aerosol Age** (on page 30) continues the article by the FDA's Julius Hauser on some of the implications of submitting a "new drug application."

- **Crown's Aerosol Exhibit Shown at International Fairs** . . . An entirely new audience for the pressured package is shown watching aerosol demonstrations in Peru, Morocco, and Tunisia. Story and pictures on page 32.

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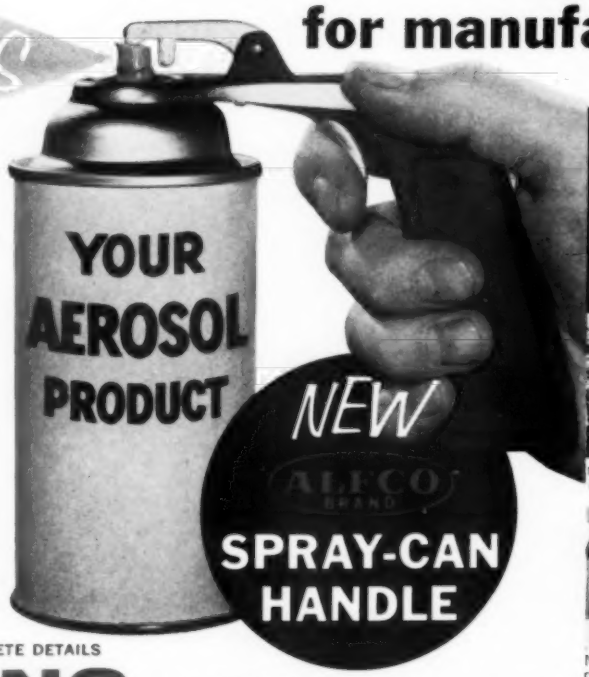

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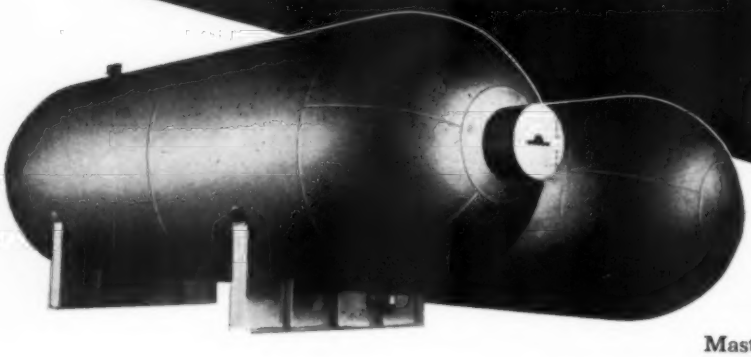

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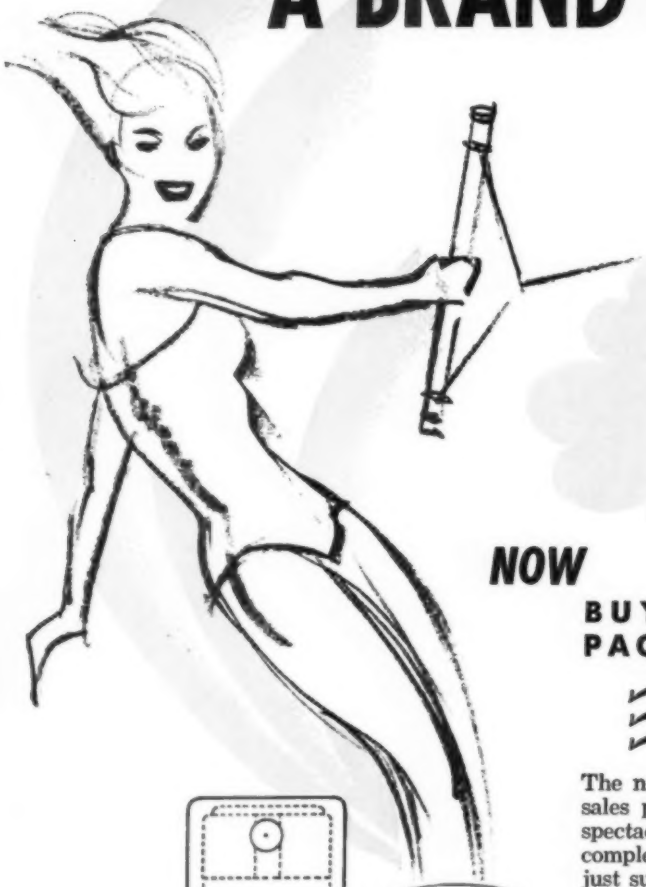

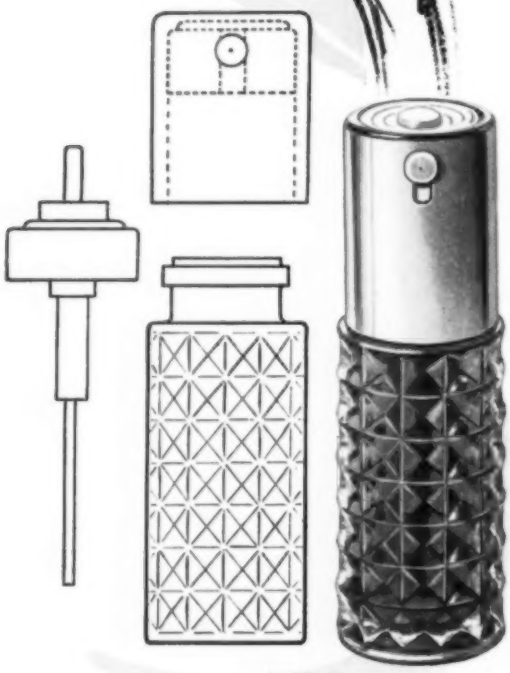

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EDITORIALS

Top Level Education . . .

DESPITE fairly good (if undercapitalized) efforts by the CSMA Aerosol Division's Publicity Committee, there continues to be substantial evidence that the aerosol message is not "getting through" to top management in companies which could have profound effects on the future well-being of the aerosol industry. Latest indication came June 21, when *Dun's Review* held a special "Packaging Management Roundtable" at the University Club in New York.

Although the executives attending this particular roundtable discussion included the very top management representatives concerned with packaging activities, according to our information most of them expressed genuine surprise at the accomplishments of aerosol packaging for a wide range of products—*many of them in these executives' own companies!* For instance, there was universal ignorance of the fact that the aerosol package has of itself *created* new products (hair sprays and room deodorants, for instance), and of the even more impressive fact that the total aerosol non-food market is now very close to the $1 billion mark.

In all this, one perhaps valid observation might be that these executives, either through too close attention to corporate affairs or because they don't listen to their own company's research and product development people, are colossally uninformed. Anyone with an even random knowledge of the packaging field, or who makes periodic visits to supermarkets, drug, hardware, or automotive supply stores, should by now be well aware of the tremendous growth of aerosol packaging.

To at least partly refute this contention that top executives are uninformed about aerosol matters, one might point to the highly successful Aerosol Symposium of the Packaging Institute (reported on page 24). But even this highly commendable effort drew far more attendance from technical and purchasing staffs than it did from the high level management which would be concerned with formulating packaging policies from the top down.

What is needed is a more concentrated industry effort toward *reaching* this top management level. A more generously endowed Aerosol Publicity Program would be one step forward, since the machinery for such an effort is already in operation. Also the technical, purchasing, and production people in major companies should forward "upstairs" CSMA product survey reports, the periodic aerosol industry newsletter "Pressure Points," this and other semi-technical magazines, and some of the other valuable aerosol literature that of itself serves as an educational medium. After all, it is by keeping the higher management echelons informed that the aerosol industry can insure itself of a continuing growth.★

The 1959 Product Survey . . .

Although space limitations in this column prevented appropriate comment last month, it should be apparent that the 1959 Aerosol Product Survey is one of the most successful to date. Filler-marketer response was far better than for the 1958 survey, and the figures reported are more valid and consequently more impressive than they have been in years. The hardworking Aerosol Product Survey Committee deserves a good deal of credit for improving so much on the previous survey.★

BACK in 1954, Peerless Tube Co. of Bloomfield, N. J. first introduced its all-aluminum, one-piece extruded aerosol container with a special neck. This container, a product of the company's long experience with collapsible metal tubes, has had a six year "crack" at the market, and has already made decided inroads on the total aerosol market—particularly in the cosmetic and pharmaceutical fields.

Peerless, founded in 1901, was one of four tube manufacturing firms launched about the turn of the century. As a matter of record, the company was responsible for many important innovations in the tube business which furnished the experience that made possible later development of the "Peerasol" aluminum aerosol container. Among the company's tube accomplishments have been: first reproduction of a halftone photograph on a tube; development (during the early years of World War II) of a vastly improved internal waxing machine which made possible the use of lead tubes during this tin-scarce period; and the first mastitis tip, developed for use with Lederle's "Aureomycin" to combat a costly ailment in milch cows.

During World War II, while aerosols were coming of age as insecticide "bug bombs," Peerless channeled its products to the production of such war products as tubes for ointment to prevent poison gas burns. Such production provided valuable experience which was later to prove of use when aerosols became so important in pharmaceutical packaging.

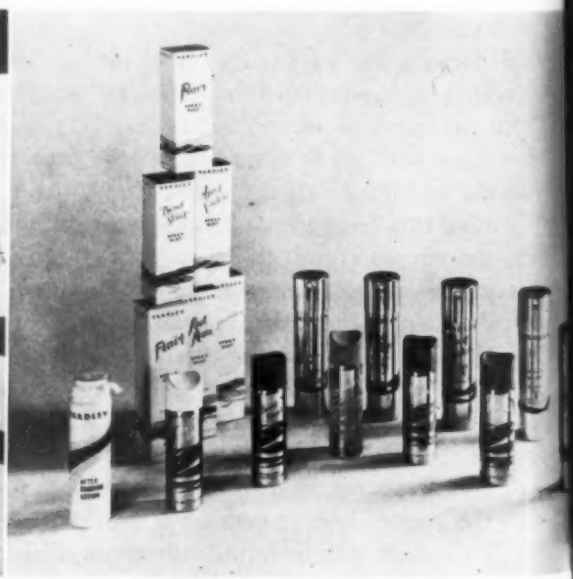
Production techniques for the early Peerless aluminum containers were designed and engineered by the company's own staff and, aside from a completely new internal spraying device, were patterned after long-standing tube production methods. Until 1956, only a 2¼-ounce aerosol container was produced, but additional sizes were introduced until the company's containers presently range, in ten sizes, from one-half to four ounces.

PEERLESS scored a major accomplishment early in 1960 with the installation of its first automatic production line for aluminum aerosol containers. This unit requires only three operators (actually for quality control and machinery maintenance) against the usual ten employees required on the old semi-automatic lines. This automatic unit has obviated the need for a small aluminum break-off tip joined to the bottom of each aerosol container so it can be handled without marring lithography. Not only has this unit made possible far higher production rates (with far less rejects), but it has already made its effect felt in improved container and coating quality.

In the automatic production unit, the solid aluminum slugs are fed through a hopper (which automatically rejects any slugs incorrectly positioned) into a clearing impact extrusion press with 75 tons pressure at impact point. Then the containers, now recognizable as such, are fed by "bubble" conveyor, during which time micrometer and other tests are made periodically to check wall and bottom thickness, into a trimmer that shears the sidewall to correct length.

Next comes one of the most important steps. A rolling machine turns the neck inward, so that the lip touches the inside of the neck to form a continuous interior circumferential bead leaving the mouth circular. Then an aluminum cup-shaped top is inserted with sealing compound so it interlocks the beaded curl and ends in a flange around the outside container neck. The center of the top is recessed to take the dispensing valve. This beaded neck process was invented by Frederic Remington, president of Peerless since 1929, and Richard A. Tartaglia, the company's

Part of the wide range of aerosol products appearing in Peerless aluminum containers. It includes cosmetics, perfumes, human and animal pharmaceuticals, and insecticides. At right is the Yardley line of colognes, plus the travel-size shaving cream.



chief engineer, with a patent granted in 1958.

This beaded neck process, which literally "hugs" the valve, plus the seamless construction and the exceptionally high bursting strength, have given the Peerasol its chief selling appeal from the technical standpoint.

After the neck has been formed, the containers are conveyed to the upper floor of the company's plant where they pass twice through a trichloroethylene washing tank for about two minutes each time. Then they are fed back onto the production line where they are spun on spindles while an internal sprayer coats them with the desired internal resin liner. To "set" these resins for maximum resistance to certain product corrosivity, the containers are preheated for one minute and then baked in an oven at very high temperatures (over 500°F.) for three minutes more.

A vinyl or epoxy-type base coat, of the desired color is then sprayed on the outside of the container, while a tripper device stops the spray gun if a spindle enters its spraying position without a container. After going through another drying oven, the containers are taken from the conveyer belt by transfer jaws, positioned for lithography (of up to four colors) on a Rutherford offset press and then swung down onto another conveyor for drying. If specifications call for a high degree of protection of the container finish against possible marring by product spray or drip, the containers are then given a coating with an external clear lacquer, usually of the epoxy type. After final drying, the finished Peerasols, at the rate of about 60 per minute, are given final production inspection and are hand-packed in nested chipboard containers for shipment to the customer.

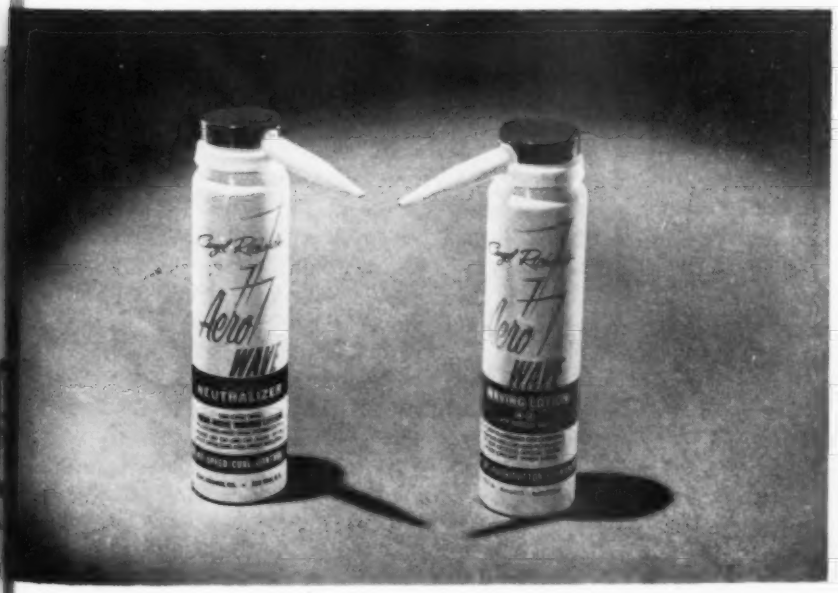
THOUGH each Peerasol container has the same physical characteristics, they may differ widely as to "special features." Selection of internal liners, lithographic printing inks, base coat formulations and external lacquers are all conditioned by the chemical characteristics of product and propellant and how each reacts with the other. Also acting to differentiate the containers of one customer from those of another are the form of product dispersal, the type of metal or plastic overcap, and possible corrosive characteristics of the valve components intended for a particular product.

"All these factors explain why it is impossible to offer 'pat' answers

The Peerless Tube Story

An old-established firm moves fast to take advantage of the rapidly-growing aerosol market. From collapsible tubes to luxury aerosol cans.

Caryl Richards' "Aerowave" professional waving lotion and neutralizer (featured on the *Aerosol Age* cover in March) will have an estimated five million units per year. Product was introduced last spring.



Cutaways of the Peerless one-piece container to show rolled neck, valve crimp, and interior of container. Unit shown is the Yardley cologne container for its "Flair."

to general questions about aluminum containers and product compatibility," William T. Hetzel, Peerless Tube's chief chemist explains. "When we have samples of all the components and after the custom filler or marketer has achieved product-propellant compatibility, then we can run parallel tests to evolve the right liners and coatings to use with that particular product. The problem does not necessarily end there, however. Frequently, the customer changes his source of supply, and just this seemingly minor change may throw out all our formulation specifications."

Generally base coatings are modified phenolics or epoxies (or combinations of the two) with the modified epoxies predominating. These formulations are chosen because they have good gloss and hiding, are color-fast or mar-proof, are resistant to product drip or spray, and may be printed on readily. In the case of initial or redesign involving certain shadings, the base coat may not remain as resistant without substantial additional testing. Mr. Hetzel suggests: "The only 'general' rule that can be laid down is that vinyl resins are usually so sensitive to a propellant that generically they do not alone suffice."

Some of the external coating problems are ameliorated by the use of aluminum, which has a surface especially suited to receive coatings. Peerasols contain 99.4% aluminum (or slightly less than metal tubes to impart greater rigidity), and under a microscope, aluminum surface looks like a series of raw teeth which readily pick up high quality coatings and inks with good hard adhesive qualities.

Mr. Remington, who has been a long-time president of the Collapsible Tube Manufacturers Council, declares: "We have carried over from our tube business the policy of using only top quality materials, lining and coating resins, inks, etc., which are an absolute necessity in producing top quality flexible tubes. Both in tubes and now in aerosol containers, we have adamantly refused to cut quality in order to meet competitive pricing on large-volume orders. We frankly feel that a packaging producer should not institute multiple quality standards for his products, that if he attempts this, sooner or later the quality of his 'best' products will suffer."

Mr. Remington reports that the Peerasol has exceeded his company's expectations in the pharmaceutical and toiletry areas, but acknowledges that chemical specialties packagers were at first slow in adopting the container for their products.

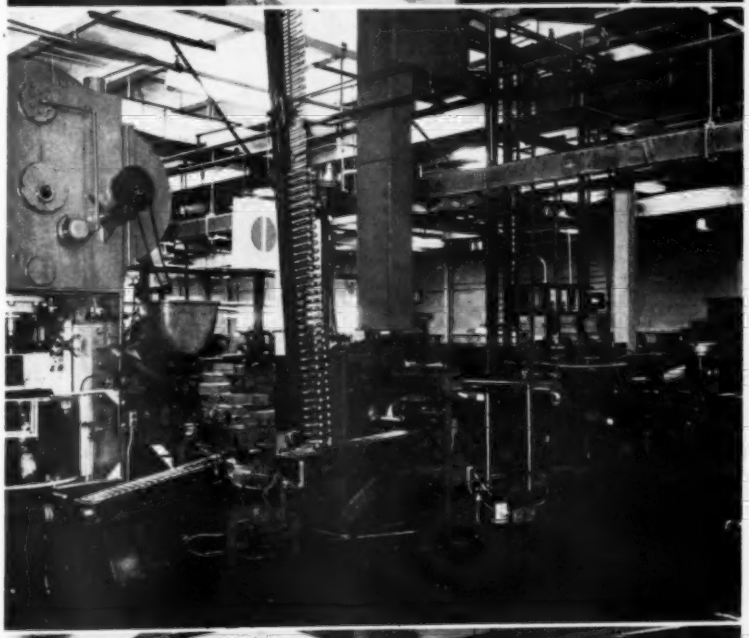
"In the cosmetic market, we have broken through very recently in three ways: first, top-notch purveyors of perfume products, such as Yardley and Tussy, have adopted Peerasols as the preferred container for their major toilet water lines. Second, Revlon has used the containers for its purse-sized hair sprays. And third, the Peerasol has apparently stimulated development of an entirely new cosmetic product just beginning to make its effect felt on the consumer market. This last is the Caryl Richards aerosol cold wave aerosol permanent for professional use, which according to that company is the first major breakthrough in the permanent waving business since cold waves were introduced a decade ago.

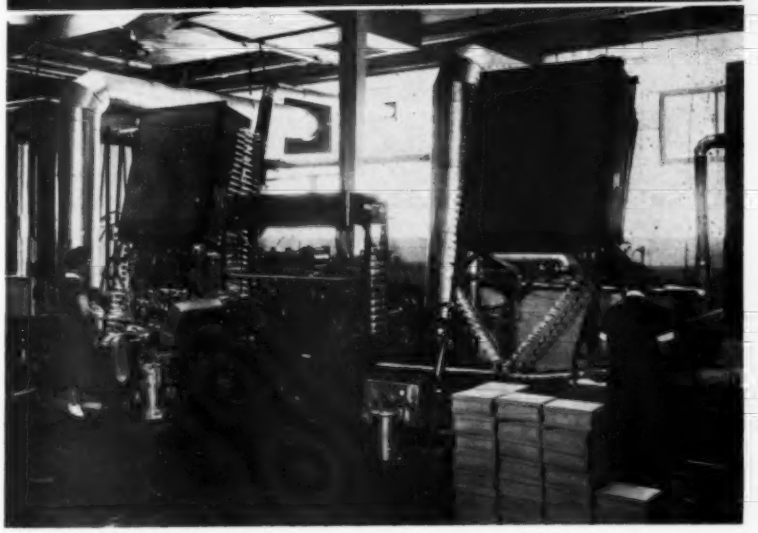
Peerless Tube's president expresses optimism about the future of the aluminum container for aqueous cosmetics, pointing out that smaller marketing firms will have to upgrade their package design to compete with the larger one in high quality decoration and cost. He quotes the most recent product survey of the Chemical Specialties Manufacturers Association, which he notes reports a 100% increase in glass containers (all sizes) for perfumes and colognes in 1959 over 1958 against a 300% increase for metal aerosols of six ounces and under.

In the pharmaceutical field, Mr. Remington contends, the concern with container quality will make the aluminum aerosol a genuine contender. But in the chemical specialties field he admits that the potential is more difficult to gauge, pointing out that this will depend primarily on the imagination of the marketer. "Two recent Peerasol applications, for instance, result partly from the fact that this container has withstood pressures in excess of 450 psi, about twice as much as the best seamed aerosols. The two examples are a Walter Kidde product called "Medicair' (containing dichlorodifluoromethane, to inflate tourniquets) and the Ronson 'Butron' (for butane) container for refilling Ronson lighters."

But in any discussion of the potential for the one-piece aluminum

Top: (from Left) Saunders Craige, Peerless vice-president, sales; Frederic Remington, president, and William G. Remington, administrative assistant to the president. Middle: First section of aluminum aerosol production line, with Clearing press at left, trimmer in center. Bottom: At left, "Peerasols" are given an external base coat after being lined. In center is lithographing operation, and at right is another drier.





containers, Peerless executives tend to return inevitably to pharmaceuticals. T. F. Schmitt, executive vice-president, for instance, is particularly high on their potential for internally-applied, surgical and topical drug applications. As recent examples of successes in aluminum, he points to E. R. Squibb & Sons' "Rezifilm," a plastic spray dressing with an antibacterial agent to give protective coating over cuts, bruises, burns and blisters or to cover standard medical dressings; Merck Sharp & Dohme's "Decaspray" (see front cover) and Schering's "Meti-Derm" for dermatological use; and Youngs Rubber Corporation's "Atha Spray," for athlete's foot. The latter product incorporates a non-removable, self-locking plastic actuator level with top, which is an innovation normally found only in cosmetic products.

Evidence of how closely Peerless has worked with fillers and customers is obvious in a case history study of the development of the Caryl Richards' cold wave product. Mr. Schmitt puts the relationship this way: "Of necessity the container manufacturer is vitally interested in the quality of the filling operation for his container; and consequently, Peerless suggests that customers select a top-notch custom filler unless the customer has full experience and equipment to do the job himself. The validity of this axiom is borne out by the fact that certain experienced customers, in preparing such sometimes difficult products as hair sprays, may fill certain product lines themselves but will leave the more complex jobs to the custom filler. For a small, inexperienced company to attempt to install filling equipment without a

(*Continued on Page* 53)

Russell McGhie, Frank Mina, Ralph Minervino, John Palmer, Charles Beach (standing), Harry Peterson, Joe Pizzurro, Brad Smith, and Sig Was photographed during one of the recesses.

Packaging Institute Holds Aerosol Technical Symposium

GOOD-NATURED verbal skirmishing on two traditionally thorny aerosol industry controversies highlighted the Special Professional Seminar on Aerosol Technology held by the Packaging Institute in New York on June 1. Both skirmishes (one on the relative safety of uncoated vs. coated containers, the other on whether a marketing company should install its own line or rely on a competent filler) were handled adroitly by the 18-man panel of aerosol experts.

The panel consisted of Jean W. Baer (Sprapak Chemicals, Inc.); Charles E. Beach (Stalfort Pressure-Pak, Inc.); John Beacher (Avon Products, Inc.); Walter C. Beard (Risdon Manufacturing Co.); L. G. Cannella (Continental Can Co.); Victor DiGiacomo (Givaudan-Delawanna, Inc.); J. J. Gregory (Newman-Green, Inc.); C. D. Hollopeter (Owens-Illinois Glass Co.); A. R. Marks (Wheaton Plasti-Kote Co.); Russell McGhie (Colgate-Palmolive Co.); Dr. Francis A. Mina (Reed Carnick Co.); Ralph Minervino (Metal Fabrications, Inc.); John J. Palmer (Peerless Tube Co.); H. E. Peterson (Peterson Filling & Packaging Co.); Joseph C. Pizzuro (Precision Valve Co.); H. E. Shepherd (Aerosol Techniques, Inc.); Bradford K. Smith (The Nestle Co.) and Sigmund Was (Emson Research, Inc.). The panel was ably moderated by Fred Pickerell (Schering Corp.), who is also chairman of the Packaging Institute's Aerosol Committee.

Chief champion for the uncoated glass aerosol container among the panel members seemed to be Dr. Mina, who said flatly that, when judiciously used, uncoated glass is *as safe* a container as any other. He pointed out that special care should be taken with the propellant system and the product formulation, and that the product should be one in which the propellant is at least partly dissolved. To demonstrate this last point, Dr. Mina said that if an uncoated bottle, filled with 14 pounds pressure of pure propellant is dropped, there will be a violent shattering due to the immediate vaporization of the entire contents. On the other hand, if the same bottle is filled with an alcohol product in which part of the propellant is dissolved, the extent of shattering will be restricted by the pressure contained in the headspace, coupled with the small bit of propulsive force inherent in the product. He said proper selection of the formulation, bottle, and propellant mixture would all figure in the relative safety of the uncoated glass package.

Mr. Marks picked up the cudgel with the argument that the safety factor in the pressurized container differs so much from the unpressurized one that there can be no legitimate basis for comparison. He reported on some of Wheaton's tests with marketed uncoated bottles in which it was found that some of the so-called "ultra-low-pressure" packages had internal pressure as high as 28 or even 35 pounds. He said that the Wheaton tests employed a four-foot drop and that the results from the tests "definitely substantiated" Wheaton's policy of not selling uncoated glass containers. He charged that the theory "might be good, but the practice of filling uncoated bottles isn't."

Mr. Beacher said his company was *against* using uncoated bottles. "Even with coated bottles," he said, "we have found a certain morale problem with our female personnel—a problem that would be worse with uncoated bottles." There is a pronounced let down reaction, he said in the case of bottles which explode in the water bath.

Charles Beach, John Beacher, Walter Beard, Len Cannella, Victor DiGiacomo, Joe Gregory, Curt Hollopeter, Al Marks, Arthur Penn and Fred Pickerell. Mr. Pickerell was moderator.

glass containers, line installation, are major subjects . . .

Since Avon introduced its line of colognes, 236 bottles have been dropped and broken by the company's customers. In all cases, Mr. Beacher reported, the plastic coating withheld the glass splinters.

The question of safety of line personnel is not a particular problem, Mr. Shepherd contended. He pointed out that use of eye shields, covered water baths, and detailed instructions for line personnel on what to do with deformed containers, all tended to overcome objections by line personnel.

EVEN after the first skirmish had died down, another smaller one came up between the two suppliers of coated aerosol containers, Al Marks of Wheaton and Curt Hollopeter of Owens-Illinois.

Hr. Hollopeter said that his company favored the bonded coating because it acts as a physical cushion against breakage, and insures against pressure-rupture of the coating itself. He suggested that the valve assembly will not leave the container so readily during breakage, and that the ring-neck feature of the Owens-Illinois container would act to hold the built-up pressure.

Mr. Marks declared that his company's non-adhered coating took better advantage of the full elasticity of the plastic coating (which he said is capable of expanding to 400 or 500% of its original volume under pressure). He said that venting through special orifices is the best way to rid of the pressure without danger from glass particles.

Continuing on the subject of glass bottles, Mr. Shepherd said that both rotary and collet crimpers have proven useful with such containers, but that the collet crimp is somewhat safer. He admitted that "aesthetics is a problem in this area, since the rolled crimp is smoother and more easily decorated." Though there is "slightly more chance of breakage" with the collet crimper, it present fewer technical and production problems. Mr. Shepherd cautioned that crimper and spinner settings are not interchangeable, even among similar bottle designs. He said that all types of ferrules will differ, and that crimper settings should be closely watched.

The fact that specification limits on glass containers vary came in for some criticism, mainly from Mr. Shepherd, who pointed out that even slight deviations in the interior of the bottles might change the headspace appreciably. He said he wished container suppliers could come up with closer tolerances on the plastic coating (at the valve opening neck) and on the glass mold itself.

Mr. Marks defended the glass suppliers by pointing out that, though the normal standard among glass suppliers is plus or minus 1/32, for coated glass aerosol containers a standard of 10/1000ths is being met.

THE second time during the day-long symposium that any type of heat was generated came during a discussion of captive vs. contract filling. Chief spokesman on the panel for the custom fillers was Harry Peterson, of Peterson Filling and Packaging, who declared flatly: "I can see no economic justification for captive filling to be even considered unless a company's aerosol volume reaches 20 million units per year." Too often, Mr. Peterson charged, such decisions are left to the production and engineering staffs of a company, without consideration of the views of the sales, purchasing, and financial heads of the company.

"There has never been a captive installation put in purely for economic reasons," Mr. Peterson contended. "By their own admission, most major marketers will acknowledge that there is *no* economic justification for even the largest captive filling installation." Mr. Peterson said he could see justification for such an establishment for only two reasons: a desire by the company's management to package under its own roof, or a wish to keep older employees working in the plant. Too often, he pointed out, the candidate for the captive filling line, will ignore the building, personnel, and warehousing needs associated with aerosol filling.

Speaking for the marketers, John Beacher of Avon Products admitted that his company had found running its own lines more expensive than using a custom filler. He explained that his company operates filling lines in

Walter Beard (left) describes the aerosol as almost a "living, breathing package" as Leonard Cannella, Jean Baer, Charles Beach, and John Beacher listen.

three locations, and at the same time makes use of six custom fillers. He said his company management was willing to accept the extra expense of line installation and labor in order to achieve the desired quality control, particularly in cosmetic products. "We are in a good position to evaluate the relative performance of the custom filler as against that of our own lines, and for most products we have found very little difference."

Charles Beach of Stalfort Pressure-Pak, acknowledged that custom fillers in general are much concerned about the problem of captive filling installations. He declared: "We must admit that we must be able to perform as good or better, as cheap or cheaper, in order to maintain our competitive position." The responsible filler, he said, will always treat the marketer's product as his own.

The next question to the panel: Is obsolescence a problem in selection of aerosol line equipment? was also fielded by Mr. Peterson. Obsolescence, Mr. Peterson contended, is a little appreciated fact by the individual engineer in the marketer companies, despite the fact that this is a daily problem for the custom filler. He suggested that obsolescence is one more major reason to entrust filling to the hands of a competent custom filler.

Mr. Peterson was also a major spokesman for yet another traditional aerosol controversy; the relative safety of propane, butane, and similar propellants. If used properly, he contended, they present no more hazard than do the conventional aerosol fluorinated propellants. These propellants, he said, are highly promising with water-base products, and are finding increased use with insecticides and room deodorants.

Russell McGhie of Colgate concurred with Mr. Peterson about the safety factor, but pointed out that cost saving has been the major advantage for these propellants. Mr. DiGiacomo (of Givaudan-Delawanna) suggested that the patent question had been a major contributor to increased use of such propellants in shaving creams.

Early in the course of the symposium, the question of how to determine growth of polyethylene dip tubing came in for consideration by two of the valve producers. Joseph Pizzurro, of Precision Valve, declared that such growth could be induced by a number of solvents, including toluene and xylene. He suggested exhaustive testing of each formulation to determine if this might become a problem, pointing out that in most cases the tube length will reach a constant dimension within a prescribed length of time. Joseph Gregory, of Newman-Green, said that detergents now a part of many formulations will also make dip tubing grow, and Dr. Mina warned that, under certain conditions, even water will cause this situation.

The relative costs of metal containers was discussed at length by L. G. Cannella, Continental Can, and John Palmer, of Peerless Tube. Mr. Cannella contended that the cost of a soldered vs. a drawn can will be "relatively equal," since for the major can companies fixed and overhead costs are about the same and material and labor costs introduce a slight differential. For the drawn can, he pointed out, slightly more tinplate is used in the manufacturing process, and the labor costs might be higher because more operations are necessary. These two factors, combined with the fact that its usually easier and less costly to lithograph the cans "in the flat," combine to make soldered cans slightly lower in price.

Queried about the use of pure tin soldering as against lead, Mr. Cannella pointed out that there would be only two reasons for the choice of tin: (1) if the product forms a precipitate with lead, or (2) if there is a possibility of an electro-chemical reaction between product and the lead solder.

Speaking on the subject of internal coating, Mr. Palmer estimated that 90% of the aluminum containers sold would have some type of internal coating. He said his company recently developed a three-phase alkaline wash to get rid of the free aluminum left in the container after manufacture. Mr. Palmer said that the new process results in a residual of less than .005 milligrams of aluminum left in the can.

Mr. Cannella suggested that ordinarily water-base containers will *not* require internally enameled tinplate cans. Queried about the possibility of packaging permanent wave lotions in enamel-coated cans, Mr. Cannella advised that testing is the only sure way to determine a reasonable shelf life for the product.

The question of other component costs came up several times during the day's discussions. Mr. Marks, in response to a question about glass bottles, said that the cost had been reduced from 15 cents when the containers were first introduced to 8 cents today. He declared that, because of the physical nature of glass and the labor and materials

(Continued on Page 48)

How far can the aerosol drug market go? The author of this article suggests that it will depend very much on the marketers themselves, pointing out that the sales curve is directly dependent on sales promotion efforts.

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The market potential of aerosol pharmaceuticals

THE AEROSOL pharmaceutical industry is currently standing at an important crossroads in its brief, seven-year history. This is not unfamiliar ground to the rest of the aerosol industry, as virtually all product groups have passed this point. The crossroads represent a choice the aerosol pharmaceutical people must make as to whether to let their product continue to grow at its present, fairly impressive rate, or to get behind it and help it up to the tremendous potential sales rate of which it is capable. Although aerosol drugs and pharmaceuticals are one of the fastest growing aerosol products, they are still *way below* their potential. The estimated $20-$25 million registered in 1959 for aerosol pharmaceuticals represents only about 13% of their present potential among topical drugs and pharmaceuticals alone. Based on a rather enthusiastic projection of past performance, it will take aerosols until 1963 or 1964 to capture even 50% of this topical potential, which by that time will be close to $200 million.

In the past five years, the total sales of all types of packaged medication have increased by approximately 57% from a value of $1.05 billion in 1954 to an estimated value of $1.65 billion in 1959. Total sales of prescription medications, on the other hand, have risen by about 105% during the same period from a total of approximately $0.99 billion in 1954 to a reported total of $2.01 billion in 1959. Figures reported to the Aerosol Division of the Chemical Specialties Manufacturers Association show that aerosol drugs and pharmaceuticals have grown from 1.1 million units in 1954 to 7.1 million units in 1958. A projection would make this an estimated 9.0 million units in 1959. (Note: Final figures as reported to CSMA indicate a market of 10.0 million medicinal and pharmaceutical aerosol units in 1959. It should be noted that the fillers' cooperation in reporting production in 1959 exceeded previous years, and hence less expansion is necessary to arrive at an adjusted total dollar value. There is, therefore, no change in the estimate of the dollar value of aerosol drugs and pharmaceuticals produced in 1959.) Expanding these figures and converting to dollars, we see that in 1956 aerosol drugs and pharmaceuticals accounted for approximately $3.8 million. In 1957 a rise occurred with the total dollar value going to $9.3 million. In 1958 the aerosol pharmaceutical industry grew to about $15 million, and in 1959 it reached an estimated $25 million.

Where the market can go from here is perhaps best determined by first investigating the advantages of aerosol pharmaceuticals and their possible potential future uses. The primary advantages of aerosol pharmaceuticals are:

1. Contents of the container remain sterile during the entire life of the container. This avoids contamination of medications, as is often the case with non-aerosol products, especially products not

* Presented at the 46th annual meeting of the Chemical Specialties Mfrs. Assn., in Chicago, May 16-18, 1960.

sufficiently antiseptic themselves, to remain germ free. A good example of this would be eye medications, which are apparently troublesome from this point of view.

2. When using aerosols to apply topical pharmaceutical products, there is no danger of a contamination of the product while applying it. This is especially true with ointments and salves which most users have a tendency to spread with the fingers or any spatula or tongue depressor that is handy.
3. Aerosol application avoids the spread of infection while applying medication. If a local infection is being treated the ordinary way, the infection can be spread while spreading the medication.
4. Application of pharmaceuticals by aerosol means avoids the pain sometimes associated with spreading salves by use of spatulas, etc. The aerosol product can be sprayed directly on the area, with no necessity of further spreading. This would be especially desirable in treating burn victims and those with sensitive dermatitis.
5. More uniform coverage of the affected area is achieved by use of aerosols. This also has another advantage in that less product can generally be used with aerosols. There is no excess product left on the spatula or wasted by spreading to excess on the skin.
6. Topical dressings applied in the aerosol manner are not only faster but easier to use. This is especially advantageous where children are concerned and also where speed of application is of primary importance.
7. There is very little danger of accidental poisoning by ingestion when the material is contained in an aerosol can. Generally the bad taste of poisonous material while being sprayed in the mouth, and the length of time necessary for a spray to deliver a lethal dose, would cause any person being so foolish to stop before much harm could be done. A child would hardly stand with his finger on an aerosol button spraying a poisonous substance into his mouth. He might, however, pick up a bottle of poisonous material and gulp down enough to do damage before the bad taste could stop him.
8. The ability of an aerosol to deliver a properly metered dose of inhaled aerosol product shows a definite advantage over vaporizers or nebulizers.
9. Powders and products incompatible with water may be administered as an air suspension for inhalation from an aerosol can.
10. More uniform particle size can be obtained by the use of aerosols than by most conventional means. This permits more rapid action when using inhaled products.
11. Because relatively uniform small particles can be inhaled by the use of an aerosol, a large portion of the field of systemic materials normally administered by injection is opened to aerosol application. Advantages for the use of aerosols in administering systemic drugs would include such things as:
    (a) There would be no need for injections and the amount of sterile equipment associated with them.
    (b) The action of drugs when applied by inhalation aerosols is theoretically as rapid as when applied by injection. There also appears to be a possibility of delayed action by small particles being absorbed immediately, larger particles more slowly.
    (c) Drugs normally taken orally will take effect much more rapidly when inhaled.

In addition to these technical advantages, aerosols and pharmaceuticals share a mutual advantage. The cost of aerosol packaging is generally low in comparison with the cost of most pharmaceutical products. Therefore, they can easily absorb the slight additional cost of aerosol packaging without fear of losing customer acceptance. Economy of use or advantages gained by this method of medication will easily outweigh the aerosol packaging costs.

MANY conditions requiring medication lend themselves readily to aerosol treatment. Virtually all types of topical medications are potential products for aerosol application.

Burn remedies are among the most familiar aerosol pharmaceutical products on the market. These products have already gained consumer acceptance, not only at the retail level but in hospital studies. The recent use of aerosol burn remedies in a Harlem tenement fire has shown that aerosol application of burn medications appears to be superior to conventional means. Currently, about $10.5 million worth of all types of burn remedies are sold annually.

Almost all types of dermatitis conditions can be more readily treated by aerosol application. In addition to prescription items sold, there are currently about $20 million worth of acne aid products sold, and $4 million worth of athlete's foot medications sold per year. Poison Ivy remedies, exclusive of calamine lotion, represent a $10 million industry. In addition, a portion of the $38 million external antiseptic field is used in the treatment of dermatitis conditions. Various antibiotic and anesthetic products are also used for topical applications for dermatitis as well as various hormones. For the prevention of dermatitis conditions in babies, such as diaper rash, aerosol sprays can be used effectively and immediately upon recognizing the outbreak of these conditions. The product can be sprayed directly upon the baby, or if skin chilling is to be avoided. it can be sprayed upon the diapers, thereby sanitizing them and using them to apply the medication to the baby.

For cuts and abrasions, various aerosol antiseptic and anesthetic prod-

ucts have appeared on the market. If it is desirable to avoid spraying these products, such as areas around the face, or where the product might contain a dye, a fast-breaking foam can be used and applied directly to the wound. These foams quickly break upon application to the skin or when a dressing is applied over them, leaving the active medication in contact with the area. They could also be applied directly to the dressing if such a method of application is desired. The remainder of the $38 million external antiseptic market not used for dermatitis type conditions is used for cuts and abrasions.

The use of aerosol application methods for applying external analgesics might eliminate the need for the messy rubbing-in of these products when used. Excluding rubbing alcohol, a $63 million market exists for this type product.

Eye lotions and washes, and particularly eye medications, could readily be applied by the aerosol principle. An oculist, when applying meddication to a patient's eyes would probably welcome an aerosol spray with a metered valve which could deliver a measured dose of sterile medication directly on the eye without the necessity of applying drops. Such applications would be quick, easy to apply, and probably would assure more uniform application of the medication. Packaged eye lotions and washes are currently selling at the rate of about $6 million per year.

Doctors also would probably be enthusiastic over a quick and easy method for applying ear medications. A convenient, low pressure, medicated spray in the ear would assure uniform application without having to drench the inside of the ear, decreasing the hearing capacity of the patient.

In the operating room, the doctor might find an aerosol antibiotic spray convenient and effective for application on incisions. Currently, antibiotic powders are dusted in open incisions prior to suturing to avoid infection. Clear plastic sprays can be used not only to avoid the necessity for suturing but also to serve as their own dressing. If small incisions are held together and sprayed, they will remain together without the necessity of suturing. The avoidance of external suturing represents not only one less area as a possible seat of infection, but also has aesthetic advantages. Plastic surgeons may, someday, find this principle to be of inestimable value. Larger incisions might be kept closed by using a spray, a layer of gauze, and another spray to protect the gauze. If infection does develop, the doctor can see through the clear spray bandage and detect it in its earliest stages.

The use of these plastic resin sprays has found application in spray bandages outside the operating room. These can be used, not only for small cuts and scratches as might be encountered around the house, but also in hospitals where large areas must be covered. These spray bandages can be of the type which will remain on the skin until peeled off, or they may be of the type that can be easily washed off when desired. Hospitals are finding them valuable in treating large open sores such as bed sores, in that they not only protect the area and promote healing, but also cut down on the time required for dressing. Fewer dressings are required and there is less chance of bed linen being soiled by contact with sores of this type. There are currently about $57 million worth of adhesive bandages and compresses sold in addition to about $3 million worth of gauze, bandages, and dressings.

Another area suitable to aerosol application of drugs and pharmaceuticals would be vaginal products. A foam type product, equipped with a metered valve and an adapter similar to that found on a feminine syringe could be used for any vaginal purpose such as common hygiene, therapeutic purposes, or for germ-killing purposes. Such a foam product could easily be applied in the proper doses without much chance for customer misuse. The use of a foam product would almost insure complete penetration to all parts of the vaginal cavity. Feminine hygiene medications and vaginal jellies and creams currently represent a $45 million market.

(Lederle photo)

Apart from topical aerosols, a separate field exists in the area of treatment of various portions of the respiratory tract. This group might include treatment of any area from the nasal passages down to the lower portions of the lung. Foremost in this area is the application of the aerosol idea to the treatment of bronchial asthma. Inhalation of airborne particles has long been a method of treating asthma. Aerosol products represent an advantage in that a metered dose of a more uniform particle size can be delivered. It has been estimated that a $6 million market exists for aerosols for the inhalation treatment of asthma. Another respiratory use might be the use of aerosols for nasal sprays, again utilizing these same advantages. A market somewhere in excess of $42 million exists for nose drops, nasal sprays, and inhalants. Mucolytic agents for use in solubilizing mucous in the lungs can be incorporated in aerosol inhalant sprays. Hospitals will probably find advantages to aerosol inhalation application for treating such diseases as tuberculosis, pneumonia, and pleurisy.

A modification of respiratory inhalation medications can be seen in the current marketing of room vaporizers. In this case, the medication is suspended in the air by the use of a room-deodorant-type of aerosol. These particles are inhaled by the

(*Continued on Page* 56)

New Drug Applications for Aerosol Pharmaceuticals

*By Julius Hauser**
Assistant to the Medical Director
Bureau of Medicine
Food & Drug Administration
U.S. Department of Health, Education, and Welfare

Part II of a Two-part article

In last month's issue of Aerosol Age, Mr. Hauser discussed in detail why and when a new drug application must be submitted, and explored at length the purpose and substance of the application.

NOW let us consider more specifically the contents of an application for a new drug. A new drug application form is available on request from FDA. It furnishes a detailed outline which should be followed in assembling the data for the application, which must be submitted in duplicate. "Assembling" is used advisedly and applies to the case of the applicant who employs able pharmacologists, clinicians, pharmacists, chemists, bacteriologists, possibly other scientists, and production employees, and who has or contracts for the facilities essential to new drug research, development, manufacture and control. Such an applicant will have developed substantially the same information as is required in a new drug application to satisfy himself of the safety, usefulness, integrity and stability of the new drug, and need only assemble it in the form of an application to be submitted to FDA. There will probably be little or no differences of opinion between the conclusions that are drawn by an able group of non-government scientists and by the FDA scientists who review an application developed on this basis. On the other hand, an application submitted by an applicant before the assembled data have convincingly demonstrated to his own scientific staff that the drug is safe and useful, is likely to encounter considerable difficulty and delay.

The investigations of the safety of the drug should include adequate tests by all methods reasonably applicable. The reports should contain detailed data derived from animal and clinical studies in which the methods used and the results obtained are clearly set forth.

It is not possible to design a single protocol of the studies that are necessary and sufficient to establish the safety of new drugs in general. The nature and extent of the investigations reasonably applicable are related to the nature of the article under investigation and its intended conditions of use. FDA scientists cannot reasonably make an advance commitment that a specified group of studies will be sufficient to establish the safety of a given article, but will furnish comment on proposed plans of study before or during the course of investigations. It is frequently desirable in the course of such investigations to modify the plan of study on the basis of preliminary results obtained. A booklet, "Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics," prepared by the staff of the Division of Pharmacology, Food and Drug Administration, and published in 1959 by the Association of Food and Drug Officials of the United States, contains useful information with respect to views of FDA concerning safety studies. Of particular interest in connection with aerosol preparations intended for external application or for inhalation use is the chapter on "Dermal Toxicity," which includes a specific discussion of aerosol preparations with tests for acute inhalation toxicity and subacute inhalation toxicity. The chapter also describes other tests frequently applicable to aerosols such as tests for primary irritation of the skin, primary irritation of mucous membrane, including the eyes, sensitization studies on skin and mucous membranes of animals and

(*Continued on Page* 59)

*Presented at the Seminar on Aerosol Technology, St. John's University College of Pharmacy, Jamaica, N. Y. on May 5, 1960.

Aerosol Room Fresheners have the sweet smell of success!

All across America, the "magic touch of aerosol packaging" has touched off a sales boom for pressure-packed air fresheners and other aerosol household products! In 1958, *aerosol room deodorants alone* accounted for 63 million unit sales . . . and the outlook is for 113 million by 1968.

Similarly, sales of other aerosol household products have practically doubled. Aerosol metal, oven, rug and upholstery cleaners, waxes and water repellants were up from 5.5 million units sold in 1957 to approximately 10 million units one year later.* If *you* have a product in any of these fields –or a related one–you should be considering the advantages of aerosol packaging *right now!*

How General Chemical can help you

To help you get started in aerosol packaging of your household product, General Chemical offers many valuable *free* services. For example, we can give you technical information which will help you determine the proper aerosol propellant for your product, its container and its uses. We can supply you with the latest aerosol market information. We can show you promising new types of aerosol formulations developed in our laboratories. And we can give you information on how contract fillers can help you, from test marketing right through to full commercial production. The fact is, through the use of contract fillers you can get into aerosols quickly and efficiently–*without any outlay on your part for plant, special equipment or personnel!*

New product ideas

As an industry service, General Chemical publishes regular "Genetron" *Aerosol Product Information Bulletins.* These bulletins contain such basic information as: typical aerosol formulations for new products or improvements on existing ones . . . application methods . . . data on stability, flammability, pressures, etc. . . . competitive products. Write for a list of the bulletins presently available.

Why not take advantage of these General Chemical services *now?* Write today to "Genetron" Dept., General Chemical Division, Allied Chemical Corporation.

*Estimated by Market Surveys Dept., General Chemical Division, Allied Chemical Corporation

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Morocco

THE story of pressurized packaging was told in more countries, and to more people, this year than in any previous year. Chief instrument of education was a special aerosol exhibit which, through the cooperative efforts of Crown Cork & Seal Co. and the Office of International Trade Fairs, was shown at fairs in such cities as Casablanca, Lima, and Tunis. The display was part of the U.S. Department of Commerce program to show the people of foreign countries how the U.S. economy works in an effort to promote a better understanding of the U.S. economic system.

A number of companies and industries were chosen to tell their stories, both on a basis of potential interest and on education for the American system. As a result of its exhibit at the 1959 AMA Packaging Exposition in Chicago, Crown was invited to tell the aerosol story at the various fairs.

At the show Crown showed the contrast betwen life in the "Good Old Days" and modern aerosol living. Using five typical situations, the exhibit featured the old and new ways of performing such tasks as pumping up a tire, applying a bandage, cooking pancakes, etc. Skilled demonstrators dramatized how aerosol-dispensed products had made easier each task.

Crown's exhibit at the National Packaging Show in 1959 (at top) served as a model for similar demonstrations in Peru, Tunisia, and Morocco. Later this year the same exhibit will be shown in Turkey.

Aerosol Exhibit is International Fairs

Canada

Using the basic plans and the script used by Crown, the Office of International Trade Fairs took the exhibit to Lima, Peru and Tunis, Tunisia last October. The Lima exhibit was part of the Pacific International Trade Fair, the first fair of such magnitude ever held in that city.

Students from Lima universities, specially trained in the Crown format, demonstrated aerosol products under the fair's theme "Better Production for Better Living." Crown provided the products used in the demonstration, and naturally, Crown "Spra-tainers" were used.

Altogether, the demonstration was given 1080 times at the Lima fair, during which reportedly enthusiastic audiences were shown how easily pressurized containers dispense shoe polish, pancake batter, and liquid coffee concentrate, and saw how to make light work of inflating an auto tire from an aerosol can. Among the thousands viewing the demonstration was Peru's President, Manuel Prado y Ugarteche.

Later that same month the exhibit was a part of the Seventh International Fair at Tunis, at which 960 demonstrations were made during the fair's two weeks. This time the audience included Tunisian President Habib Bourguiba.

Even prior to these two appearances, the Crown exhibit told its aerosol story at the Canadian National Packaging Exposition in Toronto last November. In what was the company's first appearance at the Canadian Exposition, both U.S. and Canadian sales and technical service personnel were used to staff the exhibit.

BECAUSE of the reception given the aerosol exhibit in Lima, Peru, on April 28 through May 15 it was shown at the Casablanca International Trade Fair and from August 20 through September 20 will be at the International Trade Fair at Izmir, Turkey.

In recognition of its contribution to the U.S. Dept. of Commerce program, Crown was recently presented with a citation for "Contributing to the success of the Office of International Trade presentation of the U.S. Exhibit during 1959, thereby aiding significantly in the advancement of world understanding of the peace and prosperity under the American system of free and cooperative enterprise."

The Office of International Trade Fairs has thus far told the study of U.S. products and the economic system to more than 50 million people in five years of its current program. More than 70 trade fairs in 27 countries, during 1959, saw exhibits of American products and inventive genius. So far as is known, however, Crown's aerosol exhibit was the first to show the advantages of the pressurized package during the five years of the program.★

Peruvian President Manuel Prado y Ugarteche watches a pretty demonstrator show a pressurized shoe shine.

Tunisian President Habib Bourguiba and an aide are shown pressurized griddle cakes.

Peterson Outlines CSMA Views on

NET Weights of Aerosols

IN response to a series of questions about the labeled net weight of aerosol containers, the Chemical Specialties Manufacturers Association last month clarified its position on these questions to the 45th National Conference on Weights and Measures at the Sheraton Park Hotel in Washington. Harry E. Peterson, president of Peterson Filling & Packaging Co., representing the CSMA's Aerosol Division, told the conference on June 9 that the propellant *is* included in the net weight.

The bulk of Mr. Peterson's paper contained an introduction to aerosol packaging, explaining in detail such terms as active material, solvent, fluorocarbon propellants, hydrocarbon propellants, and noncondensable propellants. Mr. Peterson also explained the difference between refrigeration and pressure filling, and outlined in detail the work of the CSMA, which he described as the "technical hub of the industry and the central watchdog for good, legal, ethical, and safe practices." He declared that each of the active committees of the Aerosol division is considering:

"(1) Ways to assure the consumer that he is getting a quality product free of misrepresentation and safety hazard.

(2) Ways to establish quality control in the materials and operations used in aerosol manufacture.

(3) Ways to assist in the clarification and establishment of Gov-explained in detail the work of the tions beneficial to the consumer and to the growth of the industry."

Mr. Peterson then turned to the specific questions asked of the CSMA by the Conference:

Is the weight of the propellant included in the labeled net weight? If so, why—since the propellant is not a usable part of the product dispensed?

We would answer the question—Yes, the propellant weight is included in the designation of net contents because it performs a useful function as follows:

The propellant (a) supplies pressure to dispense material from the container—a basic justification for the convenience of aerosols: (b) disperses the active ingredient in usable form—thus supplying the peculiar effectiveness of many aerosols; (c) allows the package to be sealed, free from spillage, air contamination, or premature evaporation.

Cases in point.—Congress has charged the Department of Agriculture with the responsibility to regulate the sale of economic poisons. This responsibility includes aerosol insecticides. One of the requirements for space insecticides is that all particles dispelled from the aerosol package must be less than 50 microns in size and 80% of the particles must be less than 30 microns. We are talking of particles, not pin*head* sizes but pin*point* size. Particle size is, of course, influenced by the valve design; but for any given valve, particle size of dispensed insecticide is a function of pressure of the propellant and its ratio to nonvolatile liquids in the container. In the final analysis, the amount and composition of propellant determines whether a space insecticide passes the Department of Agriculture regulations or not.

Whether one likes the product or not—and about 30% of U. S. men do—another example of propellant effectiveness is shaving creams. Here, volatilization of the propellant after discharge from the container produces the billowy foam—the inherent reason for aerosol shave cream in the first place.

An extreme example of why the propellant weight should be included in the marking of the contents is the room deodorant. In most room deodorants, the active ingredients may be less than 1%. A one-second burst of room deodorant, even at this low concentration of perfume or other active ingredient, discharges billions of molecules in a room. A 12-ounce can of room deodorant comprising a tenth of an ounce of active ingredient would look strange, I am sure, to the housewife if it were marked only "active ingredient one-tenth of an ounce" while, when she picked up the can, it weighed nearly a pound.

In hair spray the particle size and rate of solvent evaporation controls the coating effectiveness of resin on the strands of My Lady's hair. Again, particle size and rate of evaporation are a controlled contribution the propellant makes to the product. In fact, the amount of propellant and its composition from available alternatives supply the heart of aerosol technology and determine to a large extent whether the product is, therefore, effective and useful. Each product and active ingredient must be carefully formulated and tested with various amounts and kinds of propellant to arrive at an effective total aerosol package. The propellant, therefore, is a part of the package. It puts the "pressure" in the growing $750-million pressure package industry.

Why are commodities that have been traditionally labeled by liquid volume being measured by weight in aerosol containers?

The USDA insists on active ingredients being marked on inscticide products in terms of percent by weight. The composition of the other ingredients besides the toxicants in an aerosol insecticide can vary substantially. This is so because the nontoxicant portion of the package is a mixture of propellants having densities between 1.3 and 1.45 grams/ml and organic solvents having densities of .75 to 1.0 grams/ml. An insecticide marked "Contains 2% DDT" may appear the same to the consumer in brand X insecticide containing 6 fluid ounces of total formula as compared to brand Y having 6 fluid ounces of total formula. However, if brand X contains 8 weight ounces of formula and brand Y contains only 7 weight ounces of formula, the two products would not contain the same bug killing power. It is the industry's belief after reviewing the requirements of the Federal Trade Commission that designating insecticides by total weight is, therefore, a truer representation of bug killing power and is consistent with the Department of Agriculture regulations on weight percentages of insecticide toxicants.

The practice adopted for insecticides has

(*Continued on Page* 52)

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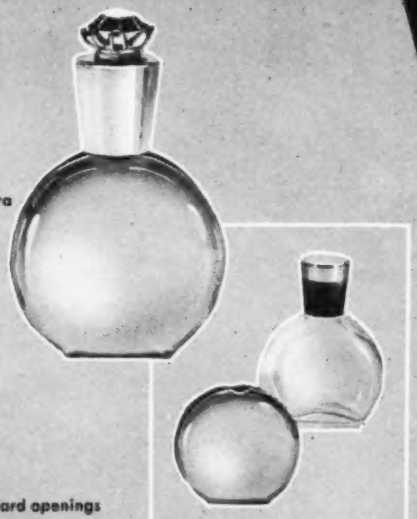

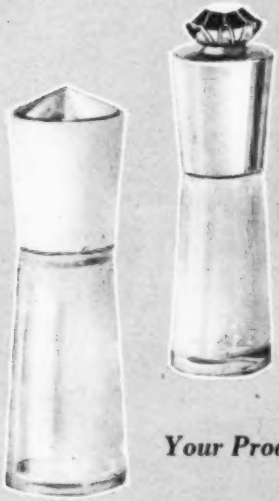

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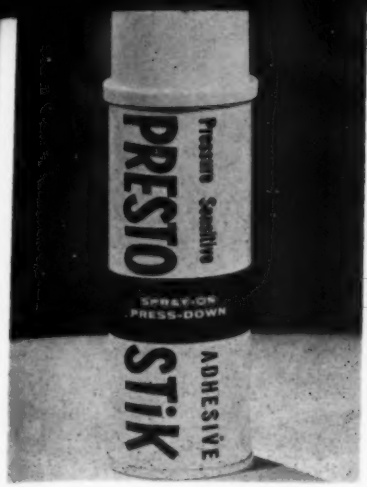

Presto Stik is a new spray adhesive for the graphic arts industry. Marketer of the product, which is water soluble, nonflammable, and clear in color, is Presto Products Corp., Chicago.

Still another product making it possible for the housewife to "wax and dust at the same time" has been introduced by the O'Cedar Division of American-Marietta Co., Chicago, under the name **Dri-Glo.** American Can 6½-ounce container employs a Risdon "Micro-Mist" valve and a Sterling Seal closure. Filler is Continental Filling Corp.

A new line of aerosol products for distribution in Scandinavia has been introduced by Torsleffco AB, Stockholm. **C-12** is an ant killer and **Ros-1** a plant spray. Loading is done by Aerosol Packaging Co. AB, Stockholm, and U. S.-made Aerosol Research valves and Crown cans are used.

NEW PRODUCTS AND PACKAGES

Stik-Free is a new frypan spray marketed by Northern Industrial Products, Ltd., Toronto. It is packaged in a five-ounce Crown can with Precision valve. It will retail at over $1.

NEWS of Pressure Packaging

Aero-Chem Is Purchased by New Conn. Aerosol Firm

AERO-CHEM FILLERS, INC., Bridgeport, has been purchased by Maru Chemical Co., Stratford, Conn. filling company, and will become a wholly-owned subsidiary of Maru. Maru is the successor to Katonah Chemical Co. and Berkshire Chemical Co., both small Bridgeport fillers previously headed by Rudy Beers.

Heading both Maru and its new subsidiary is M. M. Bassick, president, and Rudy Beers, vice-president in charge of production. Charles Rader, former president of Aero-Chem, will be vice-president, sales, of the new subsidiary and will serve in a similar capacity with the parent company. According to Mr. Bassick, plans are underway to merge both companies into one headquartered at Stratford, and to combine the five filling lines operated by both companies under one roof.

Both Mr. Beers and Mr. Rader have had long experience in aerosol production and sales. Mr. Beers was in charge of early aerosol production at Bridgeport Brass in 1943, and supervised that company's conversion from military to civilian aerosol production. He was also in aerosol production supervisory positions at Connecticut Chemicals and Powr-Pak and headed Katonah and Berkshire Chemical Co. Mr. Rader was in charge of aerosol sales at Connecticut Chemicals and Powr-Pak and was a co-founder of Aero-Chem. Mr. Bassick, who is from a family that controlled one of the largest caster and roller manufacturing company's in the world, became interested in the aerosol business last year through a sales agency of which he was president.

According to Mr. Rader, the new firm will use its versatility and service as major selling points. "We can offer great flexibility for large or small runs, and can fill any commercial product currently on the market."

•

Lachner Joins Revlon

Marshall S. Lachner, former president of B. T. Babbitt, Inc., last month was appointed senior vice-president of Revlon, Inc., a leading marketer of cosmetic products. Prior to becoming president of Babbitt in 1958, he was a vice-president of the Colgate-Palmolive Co. He will assume his responsibilities at Revlon's New York headquarters on July 18.

•

Canco to Make Glass

American Can Co., New York, last month disclosed plans to extend its operations to the manufacture and sale of glass containers. In a company prospectus, American Can said it would receive technical assistance and management services from Wheaton Glass Co., Millville, N. J. The prospectus said that this phase of the business would be conducted through a majority-owned subsidiary, with Wheaton as the other stockholder. American Can's initial investment in the venture will be $6 million.

•

Mennen Reshuffles Staff

The Mennen Co., Morristown, N.J. marketer of shaving preparations and men's toiletries, last month realigned its organizational structure and established five product groupings. Among the new appointments were that of Jack Leonard to junior product manager for the men's line, Jerry Boehling to sales promotion manager, Sylvester Cleary to marketing coordinator and assistant to the director of marketing, Sam Sirota to drug trade sales manager, and John Malloy to be sales training manager.

James Farrell, who had been responsible for materials specifications, was made packaging coordinator. Robert Foth was moved up from administrative sales manager to non-drug trade sales manager. Robert Teuscher was named administrative sales manager, and a member of the firm's marketing and product development committees.

•

CMCS Announces Fall Meeting

The Canadian Manufacturers of Chemical Specialties Association will hold its third annual meeting at the Queen Elizabeth Hotel, Montreal, Oct. 24-26. A forum on aerosols and automotives and special tariff panels on pesticides and marketing will highlight the program. Registration information is available from the association's office at 3405 Cote des Neiges Road, Montreal 25.

•

Hicklin to Avon Board

Wayne Hicklin, vice-president in charge of sales of Avon Products, Inc., New York, has been elected to the firm's board of directors. He has been with the company for 31 years.

Frawley New Babbitt Head

Michael P. Frawley, executive vice-president since joining the company in January 1958, last month was

Frawley

Sugden

elected president of B. T. Babbitt, Inc. New York marketer of aerosol and conventional household products. Mr. Frawley succeeds Marshall S. Lachner, who resigned from Babbitt to become a senior vice-president of Revlon.

Mr. Frawley's election was announced following a meeting of the company's board of directors on June 15. At the same time the board elected Alfred I. Schimpf chairman of the board and chief executive officer and John W. Sugden executive vice-president, marketing.

Messrs. Lachner, Frawley, and Sugden all came to Babbitt from Colgate-Palmolive Co., Mr. Lachner first and the others soon after. Mr. Frawley came to the company after having been general sales manager of the Household Products Division of Colgate. Mr. Sugden, Babbitt's vice-president and director of marketing prior to his new appointment, was a brand manager at Colgate.

Mr. Schimpf is an Albany, N. Y. banker and chairman of the Heartland Development Corp. in that city. The post of board chairman which he assumes has been vacant since last January.

•

Risdon Adds Plastics Division

Risdon Manufacturing Co., Naugatuck, Conn., for 50 years a metal fabricator in small components, aerosol, cosmetic containers, and the wire novelties fields, last month added a full-fledged Plastics Division to its company operations. Established to serve Risdon's own need for plastic components used in conjunction with metal parts, the division will also produce for other companies.

One chief function of the Plastics Division will be the manufacture of valve actuators, cores, cups, and dust covers for Risdon's Aerosol Division. Most of these were previously made for the company by outside suppliers. Lewis A. Dibble, president, said that the company "entered the plastic molding field originally to provide component parts of better quality, more dependable delivery, and reduced costs for Risdon's own aerosol valves."

USDA Honors Seven

The U. S. Dept. of Agriculture recently presented seven of its employees with Distinguished Service Awards for outstanding achievements in research and administration. The seven honored were Dr. Edward F. Knipling, director of Entomology Research Division; Dr. Herbert L. J. Haller, assistant to the administrator of the Agricultural Research Service; Dr. Harry C. Trelogan, assistant administrator, Agricultural Marketing Service; Dr. Gladys G. Gallup, director of Extension Research and Training; Dr. Edward C. Crafts, assistant chief, Forest Service; Dr. Henry L. Ahlgren, director of the Wisconsin Extension Service, and William D. Termohlen, retired agricultural attache to Japan.

Dr. Haller was given his award for "national and world leadership in research on agricultural chemicals and for outstanding scientific contributions to the chemical control of agricultural pests." Dr. Knipling was honored for "inspirational leadership in stimulating research, conceiving new approaches to insect control, which have received world-wide recognition, and distinguished scientific contributions to the control of livestock insects and vectors of human diseases."

McCauliff Wins CSMA Golf Outing

EUGENE McCAULIFF, president of Glyco Chemicals Division of Chas. L. Huisking Co., won the first CSMA Golf Outing on June 16 at Knollwood Country Club with a sparkling 77. In the left-hand photo, Mr. McCauliff is shown receiving his trophy from George Fiero, CSMA president, and Fred Lodes, chairman of the Golf Committee. Leonard Cannella (center), Continental Can, won a golf bag for second low gross. Other low gross winners were T. Wyman, M. Dennos, and R. Svendsen. L. Marvinney, of J. B. Williams Co. was low net winner with a 70, Tom Morgan of MacNair-Dorland Co. was second, and A. Ferrin was third. About 150 golfers played in the tournament. In the right hand photo John Gabrielson, of Avon, acted as master of ceremonies.

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ConCan Names NE Mgr.

Charles H. Day has been named general manager of the North Eastern district of Continental Can Co. This district includes can plants in Syracuse, Maspeth (N. Y.), Paterson (N. J.) and Malden (Mass.), as well as district sales offices in Boston, New York City, Syracuse, Paterson, and Maspeth.

Mr. Day, who will be headquartered in New York City, was formerly manager of manufacturing for the company's Bondware Division, and prior to that was general manager of the Metal Division's South Central district and can plant manager in Omaha.

•

Kartridg Pak Consolidates

Kartridg Pak Co., Mount Prospect, Ill., last month moved its sales and service functions for its meat packing equipment from Davenport, Iowa, to its Mount Prospect headquarters. Sales manager of both aerosol and meat packing equipment lines will be Carter N. Le Beau, recently sales manager for aerosol equipment. Service manager will be Grant Hoyt, who has held that position for aerosol equipment.

•

Tougher FDA Rule Asked

Secretary of Health, Education, and Welfare, Arthur S. Flemming last month recommended tightened Food and Drug Administration controls over the pharmaceutical industry in the wake of charges of FDA laxity before the Senate Antitrust and Monopoly Subcommittee. Among the specific legislative recommendations made by Mr. Flemming are:

(1) Provision that a drug shall be considered adulterated if it has been prepared or packed in inadequate manufacturing facilities or under inadequate control procedures.

(2) Strengthened authority for FDA inspectors to examine factory records, procedures and equipment.

(3) A requirement that manufacturers must immediately report to FDA any complaints of adverse reactions to drug products on the market.

(4) Further clarification of the new drug section to require the showing of efficacy as well as safety of the drug.

Both Mr. Flemming and Commissioner of Food and Drugs, George P. Larrick indicated that the FDA will henceforth maintain much closer scrutiny on promotional material for new drugs, a closer watch on manufacturing and control procedures, and other such measures.

•

Canco Shifts Top Execs

William C. Stolk, since 1951 president of the American Can Co., New York, last month was elected board chairman and chief executive officer. The office of chairman has been vacant since the retirement of C. H. Black in 1952.

Roy J. Sund, formerly vice-president of the company and general manager of its Marathon Division, was elected president to succeed Mr. Stolk. He was executive vice-president of the Marathon Corp. before it merged with American Can in 1957. Succeeding Mr. Sund as vice-president and general manager of the Marathon Division is Donald A. Snyder, who had been assistant general manager.

Mr. Sund and William F. May, vice-president and general manager of the Canco Division, were elected to the company's executive committee.

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CSMA Plans 2nd Golf Outing

The golf committee of the Chemical Specialties Manufacturers Association last month announced plans to hold a second golf outing in the Chicago area on Sept. 20. The outing will be held at the Medinah Country Club, just outside Chicago. Charles E. Allerdice of the Bell Co. and Robert W. Svendsen of Chase Products Co. are co-chairmen of the event.

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Fornero to Chicago Firm

Patricia Stevens Cosmetics, Inc., Chicago, Ill., last month announced the appointment of George M. Fornero as general sales manager. He formerly served Continental Filling Corp. as regional sales manager.

Barnett Joins Gene Rose

The appointment of Eugene L. Barnett as technical director of Gene Rose Co., Inc., major Midwestern aerosol filler, was announced late last month. One of his functions as director will be to coordinate expansion of the firm's research and development facilities.

Mr. Barnett previously was with National Detergents, Inc., for five years, as chief chemist in product development. Before that, he was employed by Armour & Co., Chicago, working in pharmaceutical research. While at Armour he wrote and later published two papers on enzymes for the *Journal of Biological Chemistry*.

Mr. Barnett attended the University of Illinois for three years and was graduated from Roosevelt University in 1949 with a B. S. degree in chemistry. Following that he did graduate work in Bio-Chemistry at the Illinois Institute of Technology. During World War II he served in the Okinawan campaign with the 15th Armored Division.

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Revlon Buys Realistic Co.

Revlon, Inc., New York, last month acquired the Realistic Co., Cincinnati. Realistic products include professional beauty salon permanent waves, shampoos, hair dressings, hair sprays and hair conditioners. The company will be operated as a wholly-owned subsidiary of Revlon.

"Realistic's nationwide distribution and established line of products complement Revlon's in rounding out our services to professional beauty salons," Charles Revson, Revlon president said. "The acquisition is a further step in carrying out Revlon policies to broaden services to our customers and continue the growth and development of the company in existing markets, as well as new ones."

The transaction involves a purchase price of "several million dollars" in a combination of cash and stock. Realistic was founded in 1925 by Phil D. Spaeth, who retired last month as chairman of the board. Realistic employs about 150 persons at Cincinnati. It also operates a wholly-owned subsidiary in Oakville, Ont. and has operations in Mexico and the Philippines. Realistic is believed to be the oldest manufacturer of prestige products for professional beauty salons.

New Aerosol Marketing Firm Founded in New Haven

CONSOLIDATED Research and Manufacturing Corp. a new company to develop and market aerosol and other packaging ideas, has been founded in New Haven, Conn. Located at 1184 Chapel Street, the company also acts as a consulting organization on special packaging or application problems. First aerosol product to be marketed is an anti-fog and anti-icing compound for cars, which was distributed this winter through Firestone "TBA" (tires, batteries, accessories) outlets with Amoco, Shell, Texaco, and other service stations in the U. S. and Canada.

Chief executive officers of the company are Marvin Botwick, president; Dr. Henry Milone, vice-president in charge of research, Salvatore Cuomo, executive vice-president, and Lewis Radler, vice-president in charge of marketing. Joseph Zamata, former vice-president of Powr-Pak, Bridgeport filler, is in charge of purchasing, production, and packaging.

Dow Reduces Silicone Price

Dow Corning Corp., Midland, Mich. has announced new price reductions for all standard viscosities of Dow Corning 200 Fluid (dimethyl polysiloxane) and for a series of silicone emulsions based on silicone fluid. Effective June 1, the price of each product has been reduced about 4%.

This announcement marks the 12th price reduction since 1946 for Dow Corning 200 Fluids and the 15th reduction for the family of emulsions —Dow Corning 8 Emulsion, Dow Corning 35 Emulsion, Dow Corning 35A Emulsion, Dow Corning 35B Emulsion, Dow Corning 36 Emulsion, Dow Corning 37 Emulsion. Also reduced is Dow Corning mold release fluid.

Expanding markets, increased usage and new applications are credited with the improved economy of high volume production for these products.

NEW COMBINATION
CAPPER
FOR AEROSOLS
BUILDER'S NEW "Combination Drill Press Capper" for Aerosol Bottles and Cans has a Production Rate of approximately 2 per minute with Aerosol Bottles . . . 8 per minute with Aerosol Cans.
BUILDER'S CAPPERS can be used as a DRILL PRESS where Aerosol Production does not employ it Full time. Foot Switch included for use when Capping Bottles.
Bottle Capper (motor used)
Can Capper (motor not used)
DIMENSIONS:
Base Size: 14x24", Height: 30", 110 Volt AC, ½ HP Motor
Aerosol Bottle Capper.....$208.00
Can Capping Attachment.....$160.00
BUILDERS PRODUCTS
Division of BUILDERS SHEET METAL WORKS, Inc.

Among its industrial consulting projects has been development of a permanent anti-condensation spray for aircraft engines, a project on which Consolidated has worked with Grumman, Lockheed, and other major aircraft companies. According to Mr. Radler, this development work is expected to reveal new uses for the pressurized package in industrial applications.

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Arthur Downey Dies at 62

Arthur H. Downey, vice-president in charge of research and technology of Magnus, Mabee & Reynard, Inc., essential oil company, died on Monday, June 13, at Methodist Hospital, Brooklyn, N. Y., after a brief illness.

A graduate of Pratt Institute, Brooklyn, Mr. Downey joined MM&R in 1921 as an analytical chemist, and was successively chief analytical chemist, production superintendent, and, finally, director of all MM&R scientific activities. He was an active member of the Institute of Food Technology, the Essential Oil Association of the U.S.A., and the National Pickle Packers Association. Special recognition was given him for his valuable work in connection with the revision of the *United States Pharmacopoeia*, XII Edition.

Mr. Downey is survived by his widow, Mrs. Charlotte Downey; a son, Arthur H. Downey, Jr., and two daughters, Mrs. Mildred Sprunk and Mrs. Dorothy Voorhis.

•

Houtz Appointed by Toni

Dr. Ray C. Houtz has been appointed to the new post of technical director for The Toni Co., a division of The Gillette Co., Chicago. Previously the company's laboratory director, he joined Toni in 1954 as director of basic research and service operations. Prior to that he was manager of organic chemical research in the Textile Fibers Pioneering Research Division at DuPont's Experimental Station in Wilmington.

At the same time Toni announced that Herman Bogaty, former associate research director in the operations division, has succeeded Dr. Houtz as laboratory director.

Cowles Names Frank Black

The appointment of Frank F. Black as general manager of its newly-created Chemical Division has been announced by Cowles Chemical Co., Cleveland. The new division is the result of combining the Heavy Chemical and Organic Chemical Departments which formerly handled the sale of bulk inorganic and organic chemicals respectively.

Mr. Black had been manager of Cowles Organic Chemical Department.

•

Walter Silbersack Dies

Walter F. Silbersack, president of American Home Products Corp., died early last month at the age of 58. In 1923 Mr. Silbersack joined A. S. Boyle Co. of Cincinnati, which was purchased in 1927 by American Home Products and later became part of that company's Boyle-Midway Division. He was named a director at American Home Products in 1935, executive vice president in 1943 and president in 1945. It was under Mr. Silbersack's AHP presidency that Boyle-Midway became one of the leading aerosol marketers in the country.

Mr. Silbersack was a director of the Grace National Bank, Piel Brothers, the Pacific Outdoor Advertising Co., P. J. Ritter & Co. and the 860 Fifth Avenue Corp. He is survived by a widow and two sons.

•

Gen. Chem. Names Carroll

The appointment of Frank M. Carroll, previously superintendent, to the newly created post of plant manager at its Baton Rouge Works has been announced by Allied Chemical's General Chemical Division, New York. With the division 21 years, Mr. Carroll was superintendent of its plants at North Claymont, Del., and at Newell, Pa., prior to coming to Baton Rouge in 1958. Earlier he served in several technical capacities at North Claymont. An alumnus of Villanova College, Villanova, Pa., he holds a B.S. degree in chemistry.

Baton Rouge Works, one of General Chemical's 40 producing plants, is the division's production center for fluoro-chemicals, including "Genetron" refrigerants and aerosol propellants.

•

FT Bill Backers Rally

Despite strong indications that the proposed Fair Trade Law has been abandoned until the next Congress convenes, the authors of the original bill are continuing their fight backstage in Congress, reports *The New York Times* for June 12. In the wake of shelving of the original bill of Rep. Oren Harris (D., Ark.) by the House Rules Committee, an alternate measure by Rep. Ray J. Madden (D., Ind.) is expected to receive powerful backing by the strong lobbying groups previously pushing for the Harris bill.

Rep. Madden's bill would insist that manufacturers be required to maintain the quality of their products and not permit the use of price-cutting to detract from their highest standards. This measure, called the Quality Stabilization Bill, has already received backing from a group called Quality Brands Associates and will probably be introduced when the 87th Congress convenes next January.

An attempt was made in May and June to force the Harris bill out of the House Rules Committee by petition, but the petition, requiring signatures of a majority of the House membership, acquired fewer than 100 of the 219 needed. Backers of the bill acknowledge that the fact that 1960 is an election year, coupled with the Kefauver hearings on drug price practices and spiraling living costs, have worked together to blunt any enthusiasm for the bill in Congress.

•

Greenspon to Revlon

Revlon, Inc., has appointed Herbert M. Greenspon Vice President of Operations. He is responsible for Revlon's manufacturing, purchasing, warehousing, shipping and related planning activities. His office is at company headquarters, 666 Fifth Avenue.

Since 1935 he had been with the Columbia Records Division of Columbia Broadcasting System, Inc., and was executive vice-president from 1957 until joining Revlon.

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NO MINIMUM RUN

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- Complete Lab Facilities

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FORREST EVASHEVSKI

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"REINDEER LAKE GAVE ME MY GREATEST FISHING THRILL"

"Last summer my two sons, Freddy, Jim and myself caught and released 59 lake trout in one hour. We were fishing right on the surface and hooked beautiful big trout on nearly every cast. This kind of fishing is a regular occurrence all summer on Reindeer Lake. It's the greatest fishing I've ever experienced and want to recommend it to all my friends in the U. S."

On the fringe of the Arctic 700 miles deep in the Canadian wilderness Lake Trout, Arctic Grayling, Big Northerns and Walleyes in unbelievable numbers in the crystal clear waters of the 187 x 40 mile island dotted Reindeer Lake.

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- Big 16 ft. aluminum boats.
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- The best in meals and accommodations.
- Management with years of experience.
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Arctic Lodges twin motored DC3 or C46 charter planes will fly your customers and executives directly to the lodge airstrip with one stop for customs and gas.

Top sportsmen, writers and experienced fishermen acknowledge Reindeer Lake to be the finest fishing spot in Canada.

Our 5000 ft. compact airstrip is suitable for all types of corporation and privately owned planes.

Phone or write for complete information. Our 16 mm sound and color film 25 minutes in length is available at no charge for group showings.

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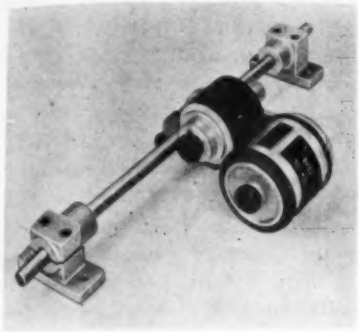
New Bell-Mark Coding Unit



The Bell-Mark Corp., 18 Ropes Place, Newark, N. J., has announced a new two-roller coding unit which may be used to deliver packaging line imprints on plastic, metal, cardboard, or paper containers or wrappers. Installed on packaging machinery or conveyor, it is said to be particularly applicable to high speed installations in which package or container identification is essential. It consists of an ink roller which transfers directly to a printing roller, and has a ten-inch printing wheel circumference with a two-inch face width. Ink roller may be easily removed.

•

Filling Machine Brochure

A six-page two-color illustrated bulletin describing its Geyer piston-type fillers for liquids and semi-liquids has been issued by The Filler Machine Co., 10 Penn Ave., Philadelphia 11. According to the bulletin, a feature of the filling equipment is easy changeover and cleaning, ability to handle delicate products, and rapid filling by bottom-up or clean cut-off. Included are one-operator machines from a two-line unit to a high-production 12-line machine filling up to 290 containers per minute.

•

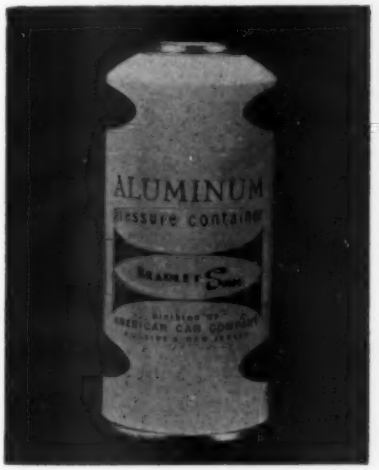
Risdon Issues Price List

A new price list for aerosol valves, containers, and related items was issued last month by The Risdon Manufacturing Co., Naugatuck, Conn. Eight-page bound price schedule contains prices and information about finishes for a wide range of cologne and perfume containers, as well as data on standard and special valves.

New Aluminum Container

An aluminum aerosol without side seam has been introduced by the Bradley-Sun Division of American Can Co., Hillside, N. J. The two-piece can is being turned out on special high-speed equipment located at Washington, N. J.

According to C. L. Alexander, corporate vice-president and general manager of the division, the selling



price per thousand will be in the range of from $50 for a plain, undecorated can to $53 for a four-color double internally-lined can. Mr. Alexander said that the method of shaping the can offers interesting possibilities for greater decoration, mainly because the can's shoulder and body consist of a single piece of metal. Also, he suggested, the seamless construction will provide for continuous decoration around the outside of the body.

The new can is fabricated by impact extrusion. An aluminum slug is fed into a press, which uniformly drives the slug into the shape of an elongated shell. The machine also prepares the top of the can to receive its valve cup. The can is trimmed and then flanged at the bottom, then passes through a series of washing cycles and is internally and/or externally coated and printed. A double seaming unit closes the can's bottom. One significant feature is reported to be development of a number of internal coating systems at American Can's Barrington (Ill.) Research Center.

Mr. Alexander said last month that Bradley-Sun's first commercial line is capable of turning out 35 million cans a year.

•

Particle Analysis Method

A new instrumental technique for automatic particle size analysis, one which employs nuclear methods to achieve precise, rapid, and economical measurement, was reported last month by Dr. Jane Connor of Evans Research and Development Corp., New York. The technique is under development in the Radioisotope Laboratory of Evans Research under the sponsorship of the U.S. Atomic Energy Commission, and is designed to overcome the limitations of present day instrumentation and methods.

Intended for general use both in industry and in the laboratory, the particle analyzer will reportedly be safe, non-destructive, and adaptable for continuous sampling in the dry or liquid state. Theory of the analyzer is based on a beta-ray, back scattering technique which measures the magnitude of fluctuations or the "spread" in a random sampling operation under specific geometrical conditions. Its source of radiation is Carbon 14 and its sensitivity range is from 1 to 500 microns. The new approach is expected to have application in any phenomena in which dispersions of fine droplets or solid particles are produced.

•

Offer New Spice Fragrance

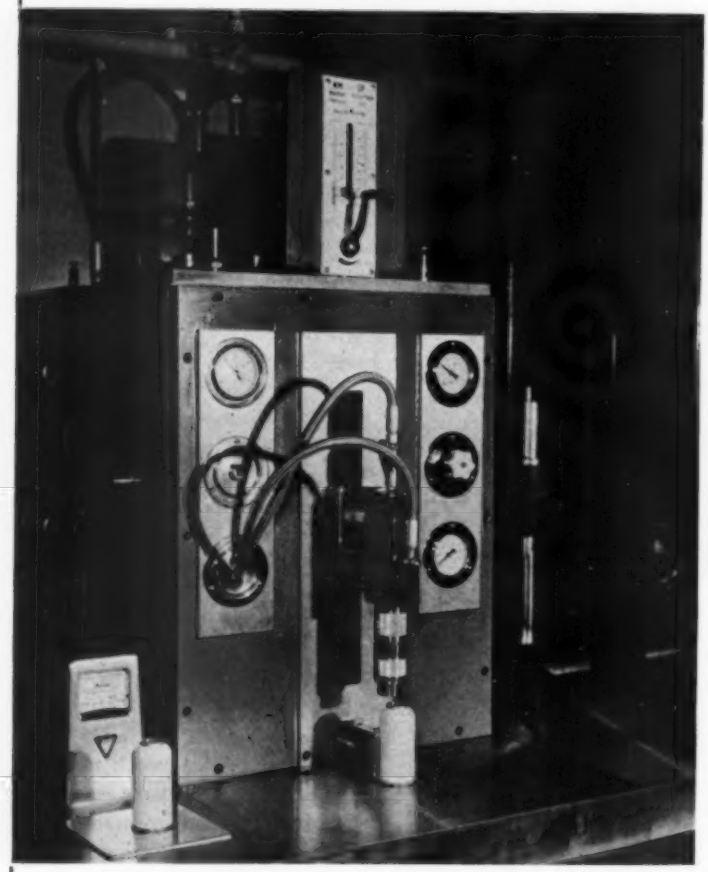
"Spicescent," a new fragrance applicable for use in aerosol formulations, has been developed by Aromatic Products Inc., New York. It is said to be a "warm, spice fragrance."

Druk Pak Announces New Models!

Europe's Most Advanced

AEROSOL PRESSURE FILLING EQUIPMENT

For all production requirements (small, medium, large)



- Fully automatic — up to 40 units per minute.
- Semi-automatic single machines — up to 30 units per minute (product filler, valve clincher, propellant charger).
- All equipment is fully pneumatically operated. No electrical controls or connections. The ultimate in safety.

Also offered are all auxiliaries, propellant pumps, accumulators, purgers, unscrambler tables, conveyor tracks, coders, tank type or fully automatic magnetic chain link belt test baths for semi-automatic or fully automatic lines.

Our production machines and laboratory units are in world-wide operation.

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Manufacturer —
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162, Kaefertalerstrasse
Mannheim, Germany

Sales Representative —
Druk-Pak Inc.
36, Merkurstrasse
Zurich 7/32, Switzerland

Plastic Extrusion Brochure

Anchor Plastics Co., Long Island City, N. Y., last month issued a new custom extrusions brochure described as the most comprehensive such booklet ever issued on the subject. It includes several articles dealing with the design and application of extrusions, up-to-date property tables, descriptions of the plastic materials, and over 700 cross-sectional diagrams of extruded moldings. Extrusion moldings are used in the aerosol industry mainly for dip tubing and valve actuator extensions.

The 72-page brochure is available free by letterhead request to the company at 36-36 36th St., Long Island City 6, N. Y.

•

Lanolin Alcohol Bulletin

Croda, Inc., 15 East 26th Street, New York 10, last month issued a new product information bulletin on its "Super Hartolan" lanolin alcohols. The alcohols are produced by what is called "the molecular distillation of mixed lanolin alcohols obtained by the total saponification of wool fat, followed by the extraction and purification of the unsaponifiable portion." Included in the bulletin is acid value, melting point, cholesterol content and other data of interest to the aerosol formulator.

•

Packaging Machinery Folder

A new, six-page, folder has been issued which describes line of packing machinery claimed to "do more and take less space to do it." Center fold-out illustrates and describes the company's coupon placing machine, carton set-up machine, stainless steel conveyor, automatic and semi-automatic case packers and case packer-case sealer. The brochure also gives company's experience, facilities and partial list of machine users. Copies are available on request from Thiele Packaging Machinery Co., 1000 Berry Ave., St. Paul 14, Minn.

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Water-Soluble Marking Ink

A new marking ink which is removable by water has been developed by Organic Products Co., Irving, Tex. Called "Water Off Ink," it is intended for use where markings are temporary and later are to be removed. It is said to have good adhesion to metals and plastics and to withstand considerable abrasion. It may be applied by use of rubber stamps and ordinary ink pads.

•

D&O Offers New Seasonings

A new form of dry seasonings has been developed by Dodge & Olcott, Inc., New York. Known as "Spisoseals," these spice seasonings are prepared from pure natural essential oils and/or oleoresins, and through unique manufacturing techniques encapsulated in a protective coating.

"Spisoseals" are said to provide excellent shelf life, are easily dispersible in liquids, form stable emulsions, provide uniformity and constancy of flavor strength and character, and may be used *without change in product formulation* as alternates for crude spices and dry solubles. A booklet is available.

Australian Propellant Maker

A new jointly owned company to manufacture aerosol propellants and refrigerants in Australia has been formed by Consolidated Zinc Pty., Ltd., and Monsanto Chemicals Australia, Ltd. To be located at Monsanto's site in Sydney, the plant will produce the "Isceon" fluorinated hydrocarbons now manufactured in the United Kingdom by Imperial Smelting Corp., another member of the Consolidated Zinc group of companies. The propellants are expected to be in full production by mid-1961.

Monsanto Chemicals Australia, Ltd., is a subsidiary of Monsanto Chemicals, Ltd., London. This is Monsanto's first venture in the aerosol field.

•

New Insecticide Line

Manco Chemical Co., Denver, last month introduced an aerosol insect spray as part of its new insecticide line. Called "Insect Spray," it has Diazinon as its chief ingredient.

Problem: How to capture a profitable market.
Solution: Switch to "controlled spray" aerosol containers.

The logical source...

EMSON METERED VALVES

If your product lends itself to controlled spray you have the opportunity for immediate customer acceptance. And an EMSON METERED VALVE makes your product the best aerosol package in its field...because EMSON is the creator of the metered valve principle, the one used on all major pharmaceutical (where accuracy is a must) and cosmetic metered aerosol packages.

Here are just a few of the powerful sales advantages with *EMSON METERED VALVES*

- Precise dosage
- Predetermined number of sprays
- No waste, no fuss
- Stainless steel parts
- One piece, seal-proof dip tubes

If product control is your problem, Emson is ready to help you.
Send for free samples and prices.

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Packaging Institute Symposium

(*From Page* 26)

which go into it, glass containers will always cost more.

For glass bottle valves, Mr. Pizzurro suggested that lack of volume is the main difficulty, since there is a total of no more than 40 million produced this year. Mr. Gregory said that, because of pricing competition, research and development work among the major valve companies has somewhat fallen off. He said that, because of esthetic demands, more goes into the cosmetically oriented glass bottle valve, thus accounting for its higher price.

Walter Beard defended the glass bottle valve price by pointing out that aerosol valves have dropped in price from 13 cents to 2½ cents in less than 10 years. He said there is a tendency in the aerosol industry to get "carried away with cost considerations," and ventured the opinion that the price of valves would not have seriously affected the growth of the aerosol market even if valves had remained double their present price.

Cold vs. pressure filling, another perennial point of controversy, came in for a fairly complete discussion by Harry Peterson and Charles Beach. Mr. Beach suggested that improvements in rotary gassing equipment have brought the two filling methods closer together (from the standpoint of production speeds). Despite the strong trend toward more and more pressure filling, he said, cold filling is cheaper for most aerosol products.

Mr. Peterson said that the cold filling speeds of 200 cans per minute have not been approached by pressure filling. He acknowledged that installation of a cold line is more expensive, but suggested that higher filling speeds more than offset this. He advised that any new line installation should combine both cold and pressure capabilities.

Messrs. Peterson and Beach also concurred on their answer about whether the filler should be allowed the responsibility of ordering and buying components. Mr. Beach said that the filler's prime function has been coordination of the efforts of all the suppliers to get the "product off the ground." Mr. Peterson contended that such a practice is the only sure way to make sure of maximum savings in component costs.

Ralph Minervino of Metal Fabrications suggested that difficulties of compatibility of product with plastic closures is a problem that is better studied by the marketer than the component supplier. Mr. Pizzurro said of the valve that such problems can be predicted by the valve maker if he is alerted in advance to any particular chemical constituents in the product which might give trouble.

In answer to a contention by Mr. Beacher that a large percentage of the product rejects may be attributable to aerosol valves, Mr. Pizzurro answered that ingredients and formulations are also a major factor. Mr. Peterson commented that valves are probably not as much a culprit as containers. Mr. Gregory contended that probably far

(*Continued on Page* 54)

Pyrethrum Exec. Visits U. S.

D. H. Pell-Smith, chairman of the Pyrethrum Board of Kenya, one of the principal producers of this leading aerosol insecticide, recently visited the United States to confer with American pyrethrum refiners. Purpose of the conferences was reported to be "long-range studies to assure stable and increasing production of pyrethrum for the American insecticide market."

Queried about possible consequences of recent political changes in Africa on future sources of pyrethrum, Mr. Pell-Smith said: "As clearly as anyone can foresee, the pyrethrum industry will continue to meet its world commitments regardless of political developments in Kenya. There are ample evidences that our feelings are shared by those abroad who study African movements closely for business reasons. An independent Kenya run by a native government, as their leaders know, would do everything possible to foster agriculture of all types, as this is the mainstay of the modern Kenya economy. It is noteworthy that in recent weeks a banking group in the British Commonwealth has made the Pyrethrum Board a long-term loan of $1 million to finance construction of additional crude extraction facilities."

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Dow Corning Signs Agreement

Dow Corning Corp., Midland, Mich., and Price-Driscoll Corp., Rockville Center, N. Y., have entered into a non-exclusive patent licensing agreement under a patent covering the use of silicone sprays as mold release agents. Dow Corning, now licensed to make and sell this release agent, is operating on royalty payments under Price-Driscoll's patent No. 2,639,213 entitled "Mold Parting Surface and Method of Application."

Price-Driscoll recently successfully defended a priority contest against the patent which was brought by a Cleveland company. Consequently, ownership of the patent is said to be now firmly established. Price-Driscoll has manufactured the product "Bomb-Lube" in accordance with this patent for several years. "Bomb-Lube" is sold principally in the plastics molding industry, where it is used as a mold release agent.

•

Aerocos Sponsors Promotion

If Aerosol Corp. of the South has anything to say about it, hundreds of beauticians will be sporting smart new "Rose Marie Reid" swim suits this summer. Donald L. Cottam, president, has just announced the launching of a novel summer promotion which entitles beauticians to a "Rose Marie Reid" swim suit free with every order of two dozen cans of "Finishing Touch," aerosol hair beautifier and conditioner containing genuine cerate of mink. This is said to be the first time the nationally advertised "Rose Marie Reid" swim suit has ever been given with merchandise. Each suit has an established retail value of $17.95.

Beauticians are invited to ask their beauty supplier how they can receive a "Rose Marie Reid" swim suit with other aerosol products, as well as "Finishing Touch." Aerosol Corp. of the South manufactures a wide variety of aerosol-packed beauty products, including "Fashionette" holding hair spray, Nail-Dri, "Regent" polish remover and the "Beauty Bonus Package" containing "Fashionette," "Finishing Touch" and the new "Selecta-Spray." The company's plant and general offices are located at Arlington, Tenn., and sales offices are maintained in Los Angeles, Chicago, New York and Dallas.

•

Hardware Show Is Set

More than 1,000 leading manufacturers are expected to display some 50,000 items, including many aerosol products, at the National Hardware Show, to be held Oct. 10-14 at the Coliseum in New York. This year the show expects more than 40,000 buyers for the show, which will occupy all of the Coliseum's 300,000 square feet of display space.

Buyers may register and receive their free badges of admission in advance by writing National Hardware Show, Suite 1103, 331 Madison Ave., New York 17.

AEROFLEX® "P" DIP TUBES

- **QUALITY CONTROLLED**—Every shipment laboratory tested for crack resistance.
- Ideal for aerosols, atomizers, squeeze bottles and lotion pumps.
- Odorless, non-toxic, resistant to most filler and propellant chemicals, crack resistant through ANCHOR's exclusive formulation of polyethylene.
- Close tolerances maintained. Precision cut and stack packed tubes available.
- Nylon dip tubes extruded for special applications.
- ANCHOR also extrudes in all of the newest materials—**polycarbonate, polypropylene, and rigid polyvinyl chloride . . . offering reliable service and on-time deliveries.**

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Sprayon Names 3 in Sales

Appointment of three new regional managers has been announced by Sprayon Products, Inc., Cleveland custom filler. The move is another step in Sprayon's continuing expansion program, according to William Moonan, sales vice-president, and is aimed at faster service and closer customer liaison.

Edwin O. Bergdahl, associated with Sprayon for four years as a manufacturer's representative, has been named Western regional manager, in charge of the 11 western states. His headquarters will be the Sprayon warehouse at 14126 Washington Ave., San Leandro, Calif.

William C. Murphy, formerly with Reynolds Metals Co., has been appointed Midwest regional manager, covering western Michigan, Illinois, Indiana, Wisconsin, Minnesota, Iowa and Missouri. His office is in Milwaukee.

John R. Sinding is the new Eastern regional manager. His territory runs from the New England states south to include Virginia, also includes metropolitan New York City and eastern Pennsylvania. His address is Box 323, Wynnwood, Pa.

•

Penick Division to St. Louis

To facilitate further expansion, the Farm Chemical and Insecticide Division of S. B. Penick & Co. will establish new headquarters in St. Louis on July 1st, according to Frank Seeland, vice president in charge of the division. The new central location is 4161 Beck Avenue, St. Louis 16.

Products sold by the division will be stocked at St. Louis, providing one more shipping point in addition to those existing for all divisions in New Jersey, Chicago and on the West Coast.

The main office of Penick, including the Botanical and Allied Products Division and the NYQ Chemical Division, is located at 100 Church Street, New York 8, N. Y. Sales offices for all divisions are maintained in San Francisco, Portland, Ore.; Chicago and New York.

New Filler in Copenhagen

Marsing & Co., Ltd., Copenhagen, Denmark, large chemical and packaging company, recently went into the aerosol loading business with the installation of a new aerosol production line. The line, which first went into operation last year, has been expanded to meet the increasing demand for aerosol products in that country. The company is also reported to be becoming increasingly active in the export field. H. Lang is director of its Aerosol Packaging Division.

•

Factor Holds Sales Meeting

Max Factor & Co., Hollywood, Calif., recently completed a series of three mid-year regional sales meetings in New York, Chicago and Hollywood, where a record turnout of the company's United States sales representatives and home office executives attended previews of new sales, advertising and merchandising programs for the balance of 1960.

Mettler

PRECISION SCALES

FOR FAST, ON-THE-LINE CHECKS OF THE FILL

Ease of operation, speed and rugged construction make them the perfect tool for quality and production control.

Built-in taring device permits easy taring of empty containers.

METTLER INSTRUMENT CORPORATION
HIGHTSTOWN, NEW JERSEY

Write to us today for full description of the modern METTLER *precision scales.*

FT Suffers Defeat, Victory

The "fair trade" concept, having undergone severe buffeting in several states and in the Federal Congress over the past year, last month won one small victory and suffered one defeat. The victory came in the New Hampshire State Supreme Court, which upheld the constitutionality of that state's 23-year-old Fair Trade Act. The defeat came in the Cincinnati Court of Common Pleas, where Judge Frank M. Gusweiler ruled the measure null and void in a key test case.

The New Hampshire case concerned a challenge by Max Dichter Co., an operator of discount houses in West Manchester, which asked dismissal of an injunction sought by Corning Glass Co. The State Supreme Court ruled unanimously that passage of the state Fair Trade act was within the "police" powers of the legislature.

The Ohio case resulted from a ruling in the suit brought by Helena Rubinstein against the Cincinnati Vitamin & Cosmetic Distributors Co., a discount house. Judge Gusweiler ruled that the legislature had not only failed to correct the faults of the previous law but had "imposed additional restraints, upon the individual property owners, which are likewise unlawful and unconstitutional." The Ohio Fair Trade Law was passed by the state legislature last year over the veto of Governor Michael DiSalle.

•

New Fleuroma Research

Dr. Jerome G. Kaufman, director of research for Fleuroma, Inc., New York, creators and manufacturers of perfume oils and aromatic specialties, has announced an accelerated research program for the development of original aromatic synthetics. The application of the latest physicochemical methods for the manufacture of natural isolates will also be intensified.

Dr. Kaufman said that increased space and plant facilities made available at the company's new quarters in Long Island City have made possible the undertaking of this expanded research program, which is expected to develop an even more diverse group of aromatics, both synthetic and natural, for use in the company's own specialties and perfume compounds.

•

Crown Appoints Two

Crown Cork & Seal Co., Philadelphia, has announced the appointment of Gordon W. Blair as treasurer. In addition he will serve as controller, a position he has held since joining Crown last year.

At the same time Crown appointed Lee D. Dubin manager of machinery sales for its Mid-Atlantic region. He is a graduate mechanical engineer of Western Reserve University.

•

Speco To Expand Plant

Speco, Inc., Cleveland marketer of aerosol chemical specialty products, has completed a 30,000-square foot addition to its plant to increase production capacity of its "Ice Rem" and other products. The expansion will be in the company's Chemical Division plant.

Yardley Names Designer

Yardley of London, Inc., announced the appointment of Samuel Kalish to the newly created position of design administrator. He will be responsible for the creativity and coordination of packaging and display designs and other point of sale specialties for the American company. Prior to joining Yardley, he headed the Sakana Corp., his own firm of visual merchandising specialties, for seven years. His formal design training was at Parsons School of Design and Workshop School of Advertising Arts.

•

Toni Co. Appoints Jenal

Robert L. Jenal has been appointed to the newly-created post of plant manager for the St. Paul Manufacturing Division of The Toni Co., a division of The Gillette Co., Chicago. He will be responsible for all operations at St. Paul. Prior to his new appointment, he served for two years as executive assistant to the vice-president of manufacturing.

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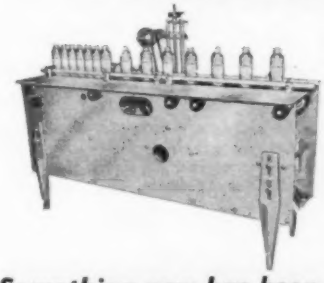

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Colgate Appoints Apperson

The appointment of Dr. Lester D. Apperson as director of research for its Toilet Articles Division has been announced by the Colgate-Palmolive Co., New York. Formerly manager of skin and oral products research, he will be responsible for all scientific programs at the company's laboratories in Jersey City leading to the development of new products for the Toilet Articles Division. He also will supervise the studies concerned with the continuing improvement of the division's present products.

Dr. Apperson began his Colgate-Palmolive career in 1940 as a chemist in toilet articles research and then served in various supervisory capacities. When the company was divisionalized in 1957, he was appointed manager of skin and oral products research.

A graduate of the University of Illinois with a B.S. degree in chemistry, Dr. Apperson received his Ph.D. in organic chemistry from Iowa State College. He is a member of the American Chemical Society, the Society of Cosmetic Chemists, the American Association for the Advancement of Science and the International Association for Dental Research.

•

CSMA Proceedings Available

The proceedings of the 46th annual meeting of the Chemical Specialties Manufacturers Association have been published in booklet form. The 252-page booklet, which contains the complete text of all papers, discussions and committee reports, costs $7.50 postpaid in the U. S. and Canada, and $8 postpaid to other countries. Orders should be directed to the CSMA office, 50 East 41st Street, New York 17.

•

LeBoeuf to GE Silicones

Harold W. LeBoeuf has been appointed manager of manufacturing of the Silicone Products Department of General Electric Co., Waterford, N.Y.

Embassy Laboratories Moves

Embassy Laboratories, Inc., private label cosmetic manufacturer, last month moved to new and enlarged quarters at 52-10 37th Street, Long Island City, New York. Headed by Edward Sagarin, the company fills toilet waters, perfumes, creams, lotions, household detergents, shampoos and similar materials in non-aerosol form.

Net Weights

(*From Page* 34)

been applied to other aerosol products and for some other reasons as well as consistency.

(a) Since the contents of most aerosol containers cannot be seen and the container cannot be opened, weight of the container and how it feels when shaken are the main indications for comparison of the product with another.

(b) People are more understanding of a "weight ounce" than they are of a "fluid ounce." Most people think of fluids in terms of quarts and gallons.

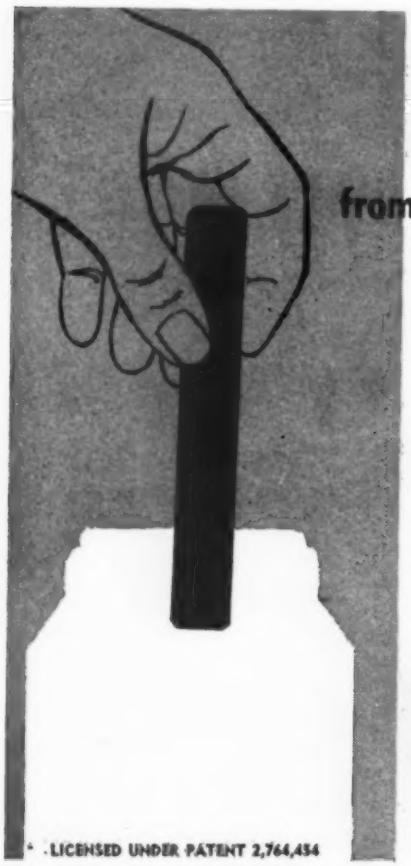
(c) Many aerosols contain ingredients whose specific volume changes significantly with temperatures. Aerosol products such as hair sprays, insecticides, room deodorants, and paints will experience a liquid volume increase of more than 1 percent for each 10°F. rise in temperature. This is a liquid expansion rate approximately ten times that of water-based products. Using weight designations avoids the necessity of specifying on the aerosol package a temperature of volume measurement.

Is the industry working toward standard containers for similar commodities?

The answer to this question is "No."

Of the three questions which we want to answer for you, on this one we have to be less definite. There is continual interest by marketers and package designers in changing the appearance of the aerosol package to make it distinctive. In the early days of the industry in the late 1940's, there was just one tin and steelplate can of standard design and capacity. Shortly, another design of tinplate can was introduced by another can manufacturer, followed by each of these manufacturers introducing other sizes. A third can manufacturer then appeared, and later on several aluminum containers were offered. Glass bottles, coated with plastic and uncoated, were introduced, followed by various plastic containers. The trend today is definitely toward more and different container sizes, shapes, and materials. The statement, "The package sells the product," is not less true in the aerosol industry than for any other line of useful products.

We have attempted to answer all of the questions that were asked of us, and the entire aerosol industry assures you of its complete willingness to fully cooperate with you on any matters applicable to our history.★



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Hans, Hentzel Resign IGA

F. H. Hans, manager of the German Aerosol Association (Interessen-Gemeinschaft Aerosole) has resigned from the association "for professional reasons." Pending election of a new secretary, association affairs will henceforth be handled through the office of W. Staehle, IGA director, c/o J. G. Mouson & Co., Mousonstrasse 9, Frankfurt/Main.

Also resigning for "professional reasons" was H. Hentzel, editor of *Parfumerie & Kosmetik*, and a founder of the IGA. Mr. Hentzel had been third chairman of the IGA. To succeed him on the board of the IGA, E. Hof of Farbwerke Hoechst A.G. was named third chairman.

The Peerless Story

(*From Page* 23)

good deal of research or without surveying operations of the best custom fillers is tantamount to product suicide."

Caryl Richards' "Aerowave" cold wave and neutralizer set is packaged in a 3.75 ounce Peerasol and marketed to professional hairdressers all over the country. Since there are approximately 150,000 beauty salons in the country (versus about 50,000 drug stores) and in view of the fact that reduction in product strength would make possible a similar product for the home-use market, the potential of this new product, already budgeted by Caryl Richards at over five million units per year, becomes a substantial one.

Peerless credits a good deal of the success of the product to the work of the custom filler, Aerosol Techniques, Inc., of Bridgeport. During two years of testing, ATI chemists evolved the correct linings and coatings and product-propellant compatibility. Key to the problem was the development of a unique semi-fluorinated hydrocarbon propellant mixture which was compatible with the cold wave lotion and neutralizer. Caryl Richards contributed the development of an entirely new wave lotion base which eliminated customary ammonia, plus the design of a plastic adapter spout which channels the spray directly into the hair.

Small Metal Aerosol Containers

	1959		1958		Early		
	Total	6 ounce metal and under	Total	6 ounce metal and under	Total	6 ounce metal and under	
Shaving Lather	72.6	51.9	45.3	26.4	16.6	—	('52)
Hair Spray	79.6	31.1	92.5	53.0	15.1	6.9	('53)
Cologne and Perfume	34.0	13.2	13.5	3.2	8.7	1.4	('56)
Drugs and Pharmaceuticals	10.0	6.2	7.1	5.6	.8	.6	('54)
Room Deodorants	21.5	3.5	49.7	36.8	7.2	3.7	('51)
	59.7	35.7	10.2	1.2	1.6	—	('56)

Because of the growing demand for its one-piece aluminum containers since introduction of the varied size ranges in 1956, Peerless has built up both its production facilities and its commercial contacts both in the U.S. and in countries outside the U.S. It has royalty arrangements with various foreign affiliates, among them Modern Containers Ltd., Toronto; and John Dale Ltd., London, England. Peerless has also established licensee arrangements with a number of leading U.S. container manufacturers to enable them to produce Peerasols as the domestic market grows. Among the American companies with licenses are American Can Co., A. H. Wirz, Inc. and Risdon Manufacturing Co.

Peerless executives tend to base their probable market estimates somewhat in excess of the market research data compiled by DuPont but somewhat below the projections of Continental Can Co. DuPont estimated 1959 non-food aerosol volume at 557.8 million units as against Continental Can's approximately 575 million (which is also the adjusted CSMA figure). By 1963, Continental Can predicts a total market of about

a billion units, while DuPont predicts this figure will not be reached until 1968.

To point up the substantial growth of the small metal aerosol, Peerless calls attention to the following non-adjusted statistics (units shown in millions) compiled by the CSMA from filler reports (on page 53).

This sharp volume growth of smaller metal containers (CSMA figures do not differentiate between types of metals) is counted on to strengthen Peerless Tube's sales potential. Mr. Remington says: "Despite the many aerosol successes, the industry is still very much in its infancy. As our gross national product increases to the anticipated $600 billion by 1965 and our standard of living continues to rise, marketers will have to compete with packaging that appeals to the consumer. This packaging upgrading will demand higher quality, more attractiveness, better product protection, and greater ease of use."★

Packaging Institute Symposium

(*From Page* 48)

more rejects are attributable to consumer misuse of the package than has been previously imagined by the aerosol industry. Mr. Beard advised that propellant leakage through the valve or container must always be considered first in relation to the size of the container. He said that a small propellant loss in a 16-ounce container might not be significant, but that in a two or three ounce container the small loss could make the package inoperable.

Speaking for the marketers, Mr. McGhie remarked that his company has experienced more consumer package complaints with aerosol packaging than with any other type of more conventional package. Mr. Beard contended that these minor complaints, though valid, pale into insignificance when it is considered that the aerosol is almost a "living, breathing object" that offers far more to the consumer than any other type of packaging.

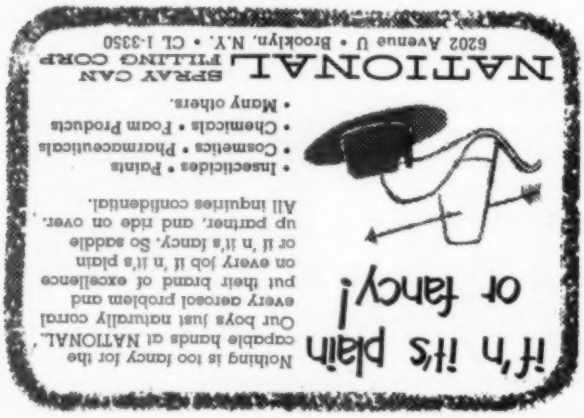
Pressurized foods were another major item of consideration by the panel, particularly by Messrs. Bradford Smith, Frank Mina and Jean Baer. Mr. Smith acknowledged that the food package's failure to thus far reach its potential has been disappointing, but contended that this was due to over-optimism on the part of marketing management rather than to any shortcomings of the aerosol. "The package must perform a normally unobtainable service to the consumer, in order to warrant the additional price. The only novelty items which have stood the test of time are those which offer distinct convenience. There is strong evidence to indicate that the housewife will not, as a matter of continued practice, buy a 'gadget' in the food line. To push a conventional product out of an aerosol package is probably *not* a justification to pay the premium price."

Mr. Baer concurred with this, and suggested that the Fancy Foods Show (held at the Statler-Hilton at the same time as the Aerosol Symposium) offered a fertile potential field for the aerosol industry's developmental imagination. He said that a tour of the show revealed only two aerosol products.

The aerosol food product will be "inevitably higher priced than the conventional package," Dr. Mina declared, because it has more components and requires some additional manufacturing steps. Despite this, he suggested, there might be a market for such traditionally inexpensive products as ketchup, where the marketer may wish to preserve brand identification in restaurants and other eating places.

Fielding a question about residual materials in the valve components causing spoilage, Mr. Smith advised that this possibility must be considered in the formulation of the product. "In filling," he said, "it is necessary that precautions be taken to prevent the package leaving the filling plant with the slightest trace of product in the valve. The design of the cover cap should be undertaken with the specific object of minimizing the danger of accidental actuation."

Sigmund Was of Emson Research hinted that metering valves for compressed gas propelled products might add to the aerosol food potential. He revealed that metered valves are now available for ranges of 35 to 200 milligrams for liquefied propellants and 80 milligrams to 10 c.c.'s for compressed gases. ★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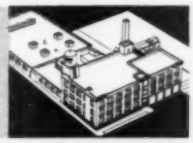

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Pharmaceutical Potential

(From Page 29)

patient in the room and medication is thus absorbed.

A THIRD aerosol pharmaceutical application apart from topical sprays and respiratory inhalation products, is the area of inhalation of systemic medications. Virtually any systemic drug innocuous to the lung tissue may possibly be administered in this way when formulation problems are solved. This represents a tremendous advance in medication, eliminating the need for injection of many materials. Many drugs, such as insulin, cannot be taken orally because of the effects of the digestive system upon the drugs themselves. The idea of rapid-acting, painless administration of drugs holds wide appeal to the medical profession. Everything from aspirin and sea-sickness medication to insulin and cardio-tonic drugs could be administered in a readily acceptable fashion. There would be no need for the delay in the action of products such as aspirin or motion-sickness tablets, nor would there be need for injection of products such as insulin and ulcer-type medications. Until now, there has been virtually no successful method for insuring proper home dosages of medications with particles fine enough to be absorbed through the lung tissue.

Aspirin alone represents approximately a $66 million market per year, while motion sickness preparations represent approximately a $12 million per year. It is estimated by the American Diabetes Association that there are approximately two million diabetics in the United States. Of these, only one million are aware of the fact that they have diabetes and half of these, or five hundred thousand, are currently using insulin injections daily, in some cases, two or more injections a day.

Straight fluorinated hydrocarbon propellants have found application so

far in assisting in skin planing. The propellant not only freezes the skin and makes it hard, but also anesthetizes the skin so that the planing may be undertaken.

Currently, there is approximately $70 million spent per year on cough syrups, elixirs, and expectorants. Such products can easily and conveniently be placed into pressurized containers and would be extremely convenient and sanitary for use, especially when used with a metered valve which would deliver exactly the required dosage.

Other areas that border on the pharmaceutical aspect of aerosols could include such things as air sanitizers and sterilants. If a truly effective aerosol air sanitizer could be developed, it would make the hospitals' jobs easier in sanitizing hospital rooms where patients with communicable diseases have been kept. Currently, only scrubbing and soaking in various strong solutions can accomplish this result. The spraying of hopital-room furniture and mattresses could easily be done by the aerosol method.

One of the biggest current headaches of hospitals is the growth of the staphylococcus type infections which have caused so much trouble recently. Most hospitals are currently on an extensive disinfecting and cleaning campaign to rid themselves of hospital staph. The development of a staph-killing aerosol for use in hard-to-reach areas behind radiators, where pipes come through the flooors or other inaccessible places would probably be a great aid to them. Economy-minded hospitals would undoubtedly welcome a large aerosol container that could be refilled by themselves or refilled by a custom filler.

IT can be seen by preceding references to aerosol products and their counterpart non-aerosol products, that there is a tremendous market for medicinal and pharmaceutical aerosols in the future. The non-aerosol figures that we have cited add up to about $450 million, and for many areas no logical estimates can be made. It is virtually impossible to estimate the value of insulin consumed, or antibiotics used in surgery. We also mentioned earlier that aerosol pharmaceuticals have *not* grown as other aerosol products have grown. However, behind the phenomenal growth of each of these other aerosol products has been a concentrated promotional effort on the part of the marketer. Such promotional efforts have not been made by the marketers of aerosol drugs and pharmaceuticals. The first ones that do will reap increased sales benefits as did the big promotional people in the other aerosol product groups. An easy illustration of this can be seen by looking at a few growth curves on other aerosol products. In most cases, aerosol products grow slowly at first, simply because of the convenience and novelty of the aerosol idea.

The aerosol idea is a good idea and will sell itself to a certain extent. This is basically why today's aerosol drug and pharmaceutical market has grown to its present size.

The growth curve of the entire aerosol industry is a fairly typical example of this "slow-then-fast" type of growth. The industry grew slowly until 1951 and the introduction of such products as room deodorants and hair sprays. The marketers of these products, particularly hair sprays, are active marketers and began big advertising campaigns which caused the industry as a whole to up. Household insecticides hit their break point also in 1951, although not as dramatically as the entire aerosol industry. Room deodorants, after a relatively slow start, increased slightly in 1951, but more so in 1954 when their concerted advertising campign was undertaken. Hair sprays began their extensive marketing campaign almost at their inception in 1952. Colognes and perfumes were extremely slow to enter the field, and therefore, their entry in 1953 begins their concerted marketing campaign which was again intensified in 1956. The classic example of aerosol growth would be in the field of aerosol coatings where the idea sold itself for a matter of close to 5 years with declining sales between 1953 and 1955.

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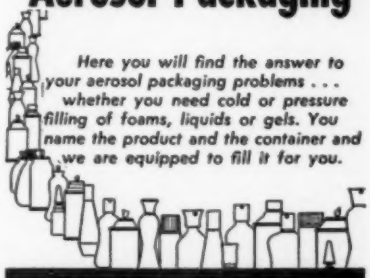

POWR-PAK, INC.
145 Howard Ave., Bridgeport, Conn.

In 1955 when marketing campaigns were undertaken, the industry skyrocketed almost unbelievably.

Today the pharmaceutical aerosol industry is standing at the point where sales can either continue at their present relatively leisurely growth rate, or they can be helped up to tremendous heights. We have seen that currently, aerosol pharmaceuticals represent only 5.5% of the figures we were able to add. We must also consider as a potential those products we were not able to add, such as injectable drugs, antibiotics, and so forth. Granted, aerosols will probably never reach more than 50% of this potential, due to technical reasons, but even this portion will give the aerosol pharmaceutical industry an ultimate potential dollar value in excess of $300 million.

If we apply this "slow-then-fast" theory to aerosol pharmaceuticals, the curve differences might look something like this. Moving under its present head of steam, the industry will probably hit about $35 million in 1960, 40 million in 1961, and thereafter slow down to reach about $60-65 million within the next decade. If proper promotional campaigns are undertaken, the industry could reach about $53 million this year and $85 million in 1961. If we remember that sales of all pharmaceutical products rose about 75% in the past 5 years, a similar increase in the next 10 years would put today's $450 million quasi potential at about $800 million. Therefore, an aerosol pharmaceutical market of $200 million or more within the next 5-10 years is easily possible with adequate marketing efforts.

Not only must the general public be informed of the advantages and conveniences of aerosol pharmaceutical products, but special emphasis must be placed upon educating the doctors and the pharmacists. If these influential people cannot reassure their patients that aerosol drugs and pharmaceuticals have definite advantages, the people will soon lose confidence in the promotional efforts of the marketer. Currently, of 76 pharmacy colleges in the U.S., only four are offering courses with emphasis on aerosol pharmaceutical products. It is doubted that most medical colleges make more than a passing mention of aerosol drugs and pharmaceuticals as therapeutic aids.

The aerosol industry should encourage and help pharmaceutical schools to turn out pharmacists with an understanding of the uses and benefits of aerosol products. With training, the druggist could learn eventually to fill his own aerosols to cover the small portion of his business in which he actually compounds the desired prescription. Likewise, efforts should be made to interest medical schools in programs whereby they can learn the advantages of aerosol application of drugs and pharmaceuticals.

Although medical school curricula are undoubtedly quite crowded, the aerosol industry should make an effort to have competent, trained aerosol pharmaceutical people lecture to these forthcoming doctors during their classes on medications and pharmacy, to teach them the advantages of aerosols.

Another avenue open to reaching the doctor and the pharmacist is the use of industry-type advertising in the trade journals of the doctors and pharmacists.

Although the road to greater sales of aerosol pharmaceutical products will be the rougher road, with in-

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creased expenditures for advertising and marketing, there are stepping stones along the way to make things easier. The relatively untouched fields of pressure dispensed oral drugs, aerosol inhalation of systemic drug, and aerosol vaginal products, as well as the recent developments in small and large dosage metered valves, controlled area sprays, and the development of the fast-breaking foams, can be used to help the imaginative aerosol pharmaceutical marketer along the way.

Aerosol drugs and pharmaceuticals can either sell themselves at their present rate, or progresive marketing and promotion can help them to become at least a 200 million market or more within the next decade. The choice is up to those in the aerosol and pharmaceutical industries with an interest in increasing profits.

Some of the aerosol pharmaceutical products touched on in this paper are currently on the market; while others will require intensive research and development before they become realities. They have been cited only to show the tremendous potentials posisible if medical science and aerosol development specilalists team up together .

Because this has been a marketing paper, the dollars-and-cents aspects of the various aerosol drug and pharmaceutical products has been emphasized. The real gains, however, lie not just in increased profits to the aerosol and pharmaceutcal industries; but in the potential benefits to medical science from the development of better and easier methods of administering therapeutic medications through the use of the aerosol principle.★

New Drug Applications

(From Page 30)

men, photosensitization, and systemic dermal toxicity, which includes acute dermal toxicity and subacute dermal toxicity studies.

Reasonably applicable safety tests for aerosol preparations may include tests by other routes of administration, depending on the intended use of the drug. Preparations intended for application to wounds or broken skin may require study with respect to bacteriological characteristics both in terms of preventing and avoiding the introduction of infection. Bacteriological considerations may also be important in relation to routine manufacturing and control procedures, for example, to insure a sterile product when necessary for safety.

SAFETY tests for pressurized aerosols clearly should include a showing that the container will not cause injury by bursting under ordinary conditions of use or if it is accidentally dropped. In this connection the specifications of the Interstate Commerce Commission with respect to pressurized metal, glass, and plastic containers will be of interest to the applicant. The hazard involved in the possibility of bursting of containers should also be controlled by appropriate specifications and test procedures on a continuing batch basis.

The safety data as well as other information in a new drug application may be submitted directly by the applicant or incorporated by an authorized reference to pertinent information submitted by the applicant's supplier of raw materials, containers, valves, and manufacturing or control services. It may be desirable in some cases to determine whether a supplier can furnish needed information rather than to repeat work that has already been done.

As I mentioned earlier in discussing the newness of a drug, it is desirable that the information concerning the composition of an aerosol preparation include not only the quantitative composition of the material in the container but also the quantitative composition as delivered to the body, that is, taking into account dissipation of the propellant and other volatile compounds.

The detailed outline furnished by the application form with respect to manufacturing and control procedures is largely self-explanatory. It might be emphasized, however, that if part of the manufacturing operation is performed for the applicant by another firm, for example a contract filler of an aerosol preparation, the firm actually performing should describe its own methods and facilities and control procedures as they will be employed on behalf of the applicant and this statement should be endorsed by a responsible representative of the firm. Such descriptions

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may be submitted directly to FDA or through the applicant. Similarly, descriptions of control procedures performed by a consulting laboratory for an applicant should be prepared and signed by that laboratory. We believe it is generally desirable for the applicant to independently check compliance of an article manufactured for him with its specifications. When this is the case it should be described in the application.

Among the special controls which frequently are required for aerosol preparations, some of which have been mentioned above, are specifications and batch tests with respect to pressure, leakage, bursting hazard, valve function, spray characteristics, particle size, bacteriological quality, and in the case of aerosols with metered valves, the amount of product delivered on each depression of the valve. We believe control should also include a determination of the actual quantity of the contents that will be delivered by a pressurized container and that the label statement of the quantity of the contents should not exceed the minimum quantity delivered under conditons of use.

Stability studies are a generally required part of a new drug application. In the case of pressurized aerosols such studies should show not only that the product is essentially unchanged in composition within the container but that the container and valve are sound and in good working order under conditions of storage and use. When indicated by the studies, the label should bear an expiration date with a clear explanation of its meaning, for example "Do not use after *(date)*."

Generally the labeling of aerosol preparations will be similar to the pattern of labeling employed on other drugs with perhaps a few unique characteristics. If the drug is to be sold over the counter, that is, without prescription, the package should include among other things adequate directions for use in self medication and adequate warnings. The list of drug warning statements published in the Federal Register of March 25, 1960 (which is available from FDA on request) may be helpful. Generally a new drug application for an over-the-counter drug may not be made effective unless it bears the substance of the recommended warning in that list, when applicable to the product. The label of a pressurized container should of course include the warning statements required by the Interstate Commerce Commission regulations. It may also be necessary for the article to bear a warning with respect to the distance from which a pressurized aerosol should be applied to the body to avoid injury by freezing. This is also required on the label of pressurized containers limited to prescription sale.

If the aerosol preparation is a prescription drug, we recommend that labeling on or within the package include full information for its professional use as well as the prescription legend. The label of a prescription drug should bear a quantitative statement of its composition. In the case of a pressurized aerosol, to furnish adequate information for its professional use it may be desirable to declare this both in the usual way that is, in terms of the composition in the container, and in terms of the composition as it reaches the body.

If the article has a metered valve, whether or not it is a prescription drug, the label should bear a statement of the quantity of the drug delivered by a single depression of the valve.

It is not necessary to undertake the expense of preparing proposed labeling in final printed form for submission with a new drug application. Typewritten or other draft copies of labeling are acceptable for conditional consideration of an application provided that the applicant makes a commitment to submit final printed labeling identical in content to the draft copy as soon as available and prior to the marketing of the drug. It may be noted in this connection that the preparation of a large supply of expensively labeled aerosol containers in advance of clearance of a new drug application may lead to a total loss of that investment. Unsatisfactory labeling will not be cleared on the grounds that there is a substantial investment in it.

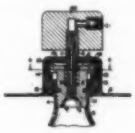
We have reached the point where we may begin to recognize that not all of the questions relating to new drug applications for aerosols or other products can be thoroughly explored within 30 minutes. The "New Drug Regulations," available on request from FDA, answer some of the other questions. ★

New Aerosol Patents

Listed below is a brief review of recent patents pertinent to the aerosol and related industries.

Complete copies of these patents may be obtained by writing to the Commissioner of Patents, U. S. Patent Office, Washington 25, D. C., and remitting 25 cents for each copy desired.

2,937,791. PRESSURE DISCHARGE CAN. Issued May 24 to Lewis A. Misallef, New York, N. Y.



A dispensing container comprising a metal can adapted to contain a gas under pressure, said can having an opening in one end, a closure for said opening having a portion of reduced diameter extending into the can, a bag of flexible material of a size when extended to substantially fill said can, said bag having a neck portion of reduced diameter surrounding the inwardly projecting extension from said closure and attached thereto, said inwardly extending portion having a bore leading from the interior of the bag to the exterior of the can, a valve in said bore, said valve including a valve operating member extending from the valve within the bore to a position above the surrounding portions of said end closure, said closure having a passage through the portions surrounding the inwardly projecting extension, and means for closing said passage after said can is charged with gas under pressure.

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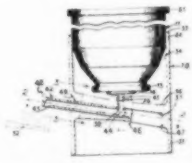
2,935,232. INVERTED PRESSURIZED DISPENSERS. Issued May 3 to Ralph H. Thomas, Rahway, N. J., assignor to Bristol-Myers Co., New York.



A fluid dispenser comprising a valved pressurized container containing a fluid to be dispensed and having a hollow, depressable valve-actuating stem projecting from one end thereof, a container holder comprising a base and an upright sleeve having an open outer end and defining a cavity for slidable reception therein of said container, a housing provided with a slideway extending substantially transversely of said sleeve and a passageway extending substantially along the longitudinal centerline of said support and intersecting said slideway, an elongated hollow spout slidably mounted within said slideway, said spout having a discharge port at one extremity thereof and an aperture registrable with said passageway adjacent the other extremity thereof, and means to secure said stem to said housing in registration with said passageway whereby movement of said container inwardly of said sleeve actuates said valve to dispense the contents of the container when the aperture of the spout is registered with said passageway.

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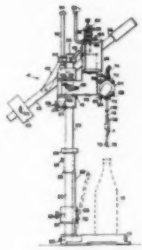
2,932,551. FILLING DEVICE. Issued May 31 to Robert S. Hallstein, Elmira, N. Y., assignor to Thatcher Glass Manufacturing Co., Elmira.

In a container filling device: a base for supporting an open top container in upright position, a vertical rod extending upwardly from said base, a liquid discharge member positioned above said base, means for connecting said discharge member to said rod for vertical reciprocatory movement of said member relative to said base, means adjustably mounted on said rod for limiting



the downward movement of said member to a position wherein it enters the open top of a container supported on said base, a liquid supplying passageway communicating with said discharge member, a normally closed valve in said passageway for controlling liquid flow to said discharge member, an electromagnet operatively connected to said valve to move the latter to open position when energized, first means for energizing said electromagnet only when said discharge member is at its lower limit position and preventing energization of said electromagnet at all other positions of said discharge member, and second means responsive to liquid level in the container for deenergizing said electromagnet when the liquid in the container reaches a predetermined level during the time said discharge member is at its lower limit position.

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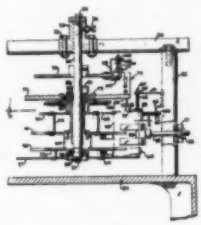
2,935,933. CAN MARKING MACHINE. Issued May 10 to Frank C. Moeller, Mountainside, N. J., assignor to Adolph Gottscho, Inc., Hillside, N. J.

A machine for stamp marking cans which comprises a vertical stationary shaft, a hollow axle mounted for rotation about said shaft, a horizontally disposed disc-shaped can support secured to said axle for rotation therewith, a plurality of horizontally disposed can receiving discs coaxially secured to said axle above said support and substantially spaced from each other, said discs having a succession of can receiving recesses therein adapted for receiving a succession of vertically disposed cans



carried by said support adjacent the margin thereof, means for feeding a succession of vertically disposed cans onto said support, means for removing cans from said support, a marker supporting disc coaxially secured to said axle, a succession of marker units, each presenting an inking stamp, means for actuating said marker units for stamping said cans responsive to rotation of said marker supporting disc, an inking device comprising a rotatably mounted inking roller disposed for peripheral contact with said inking stamp during rotation of said marker supporting disc, a gear secured to said axle, and gear means mechanically connected to said inking roller adapted to coact with said gear for rotation of said ink bearing roller responsive to rotation of said marker supporting disc.

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2,936,560. APPARATUS FOR PACKAGING ARTICLES. Issued May 17 to Hermond G. Gentry, Atlanta, assignor, by mesne assignments, to Mead Packaging, Inc.

Apparatus for packaging articles in a wrapper blank comprising means for supporting a package group of said articles at a folding station to have said blank wrapped thereon and means for securing the wrapped blank on said package group at a locking station; said supporting means including a plate member no wider than said package group and a pair of guide strips spaced above and at each side of said plate member for confining said package group in centered relation thereon, whereby a wrapper blank may be folded downwardly over said package group and strip elements and overlapped beneath said plate member and the resulting wrapper enclosed package group may then be stripped from said plate member and guide strips; and said securing means including a guideway aligned with said plate member and guide strips for receiving a wrapper enclosed package group stripped therefrom and a positioning element pivotally mounted adjacent the entrance end of said guidway

on a transverse axis disposed below the level of said guideway and extending in the direction of the discharge end thereof with a biased disposition of its extending end above said level, whereby a wrapper enclosed package group stripped from said plate member may be advanced onto said guideway past said positioning element and then retracted to an abutting position therewith for proper location at said locking station.

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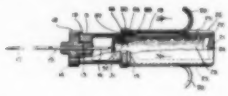
2,936,756. HYPODERMIC NEEDLE UNT FOR DISCHARGE OF MEDICATIONS FROM PRESSURIZED VIALS. Issued May 17 to Daniel Gabriel, Bonny Blue, Va.

A hypodermic needle unit for vials of the character described, said unit comprising a tubular cylinder and a needle part, one end of the cylinder having a threaded bore, the other end of the cylinder having an enlarged tubular head, the bore of which



is of greater diameter than the diameter of said cylinder to form a shoulder in said head, a pair of long parallel guide and supporting arms extending integrally from the end surface of the head, said needle part having a threaded portion engaging the threaded bore of the cylinder, a knurled head on the needle part at the first named end of the cylinder, a tubular hypodermic needle in said needle part, said needle having a long outer end and a short inner end arranged in the cylinder, and the free end of said short inner end terminating inwardly of said shoulder.

Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however, many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

BERMUDA BREEZES, for perfume. Filed May 15, 1959 by Perfumeries Distributors, Ltd., Hamilton, Bermuda, giving first use in commerce March 18 of same year.

STA-WAVE, for hair-setting preparation. Filed June 29 by Sta-Wave, Inc., Eugene, Ore., listing first use Nov. 16, 1947.

OFF LIMITS, for cologne and perfume. Filed May 28, 1959 by House of Westmore, Inc., New York, claiming first use May 13, 1959.

AERO-JET, for aerosol paints, paint primers, enamels, lacquers, varnishes, and plastic coatings. Filed April 16, 1959 by Aero-Jet Products Corp., Cleveland, reporting first use March 17.

METADELPHENE, for insect repellent. Filed Aug. 31 by Hercules Powder Co., Wilmington, listing first use June 15, 1957.

BROKOSPRAY, for medicinal preparation for the treatment and/or the prevention of asthma. Filed Jan. 8 by George A. Breon & Co., New York, reporting first use Dec. 9, 1959.

MAGIC TAN, for suntan lotion. Filed April 20, 1959 by Lawrence Tootikian, d.b.a. Lawrence P. Tootikian, Shaker Heights, O., listing first use Jan. 15 of same year.

T.R., for remedy for athlete's foot and ringworm. Filed Nov. 2 by T. R. Gibbs Medicine Co., Washington, giving first use Dec. 2, 1958.

ATOMETER, for pressurized container which is sold with a medicinal inhalant therein. Filed July 22 by The Upjohn Co., Kalamazoo, Mich., giving first use as March 23, 1959.

POWDER UP, for deodorant powder spray for use on the person. Filed Oct. 1 by The Andre L. Richard Co., New York, claiming first use Aug. 26.

NO BUZZ, for insect-mosquito repellent lotion. Filed May 29, 1959 by The Garden Protector Corp., Revere, Mass., giving first use as March 31 of same year.

PERMA STOP, for fungicidal agent which also functions as a deodorant and sanitizing agent for clothing, carpets, and other inanimate objects. Filed Aug. 12, 1958 by Everpure Laboratories, Inc., Boston, reporting first use as July 10, 1958.

ODEX, for aerosol electric shaver lubricant and sanitizer. Filed Dec. 22 by The Odell Co., Newark, N. J., claiming first use Nov. 27.

SALENTINE, for preparation which provides relief for bee stings, poison ivy, and also protects against mosquitos, flies, and gnats. Filed Nov. 7, 1958 by Arthur Hemstreet, Little Falls, N. Y., with first use claimed for Oct. 10, 1954.

SHEER MADNESS, for cologne, perfume, and dusting powder. Filed April 22, 1959 by Prince Matchabelli, Inc., New York, with first use given as Jan. 13, 1959.

SIGMA, for spray deodorant. Filed Nov. 27 by The Mennen Co., Morris Township, N. J., with first use reported as Oct. 2.

COME ALIVE BLONDE, for hair tinting and coloring preparations. Filed June 27, 1958 by Clairol Inc., Stamford, Conn., giving first use as March 31 of same year.

TEMPO, for hair fixative. Filed June 2, 1958 by Helene Curtis Industries, Inc., Chicago, reporting first use April 15, 1958.

LIDODERM, for pharmaceutical preparation—namely, a topical anesthetic ointment. Filed Aug. 4, 1959 by Swedish Pharmaceuticals Ltd., New York, claiming first use July 15, 1959.

VENT VERT and JOLIE MADAME, both for perfume and toilet water. Filed Oct. 15 by Pierre Balmain, Paris, France, giving first use Dec. 23, 1947 and for second Feb. 3, 1953.

CORT-QUIN, for medical preparations for the external treatment of skin infections, diseases, and other irritations. Filed Jan. 21 by Dome Chemicals, Inc., New York, reporting first use July 21, 1958.

GOLD SEAL, for combustible charcoal starter marketed in a pressurized container. Filed Jan. 18 by Gold Seal Co., Bismarck, N. Dak., with first use claimed for June 17, 1958.

BON VOYAGE, for perfume, cologne, and dusting powder. Filed Sept. 11 by Les Parfums de Dana, Inc., d.b.a. Dana, New York, with first use given as March 29, 1951.

DEMOISELLE, for cologne, bubble bath, dusting powder, etc. Filed Oct. 27 by Tom Fields, Ltd., Englewood, N. J., with first use claimed for Aug. 5.

SOF STROKE, for aerated shaving cream. Filed Nov. 27 by The Mennen Co., Morris Township, N. J., with first use reported as Oct. 2.

SMASH, for penetrating oil and rust solvent. Filed Dec. 3 by Panef Manufacturing Co., Milwaukee, with first use claimed for Nov. 12, 1959.

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Mount to Rexall Subsidiary

Dr. Lloyd G. Mount has been named president of Carnegie's Fine Chemicals of Kearny, Kearny, N. J., a wholly owned subsidiary of Rexall Drug and Chemical Co. The company manufactures industrial and fine chemicals. Dr. Mount holds a Ph.D. degree in organic chemistry from Yale University. His professional career includes association with the American Cyanamid Co., Chemstrand Corp., Food Machinery & Chemical Corp. and Vitro Corp. of America, in research and commercial development activities.

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Beaux Joins Verley Staff

Edouard Beaux has been named chief perfumer of Aromescence, Inc., Paris subsidiary of Albert Verley & Co. Formerly associated with Chanel, Paris, M. Beaux recently completed a visit to the U. S. to inspect Verley's perfume and aromatic production facilities.

CLASSIFIED ADVERTISING

Address all classified replies to Box Number c/o *Aerosol Age*, PO Box 31, Caldwell, N. J. Rates for "Help Wanted" advertisements are 20¢ per word; minimum charge $3.00. Rate for individuals seeking employment is 5¢ per word, $1.00 minimum. Advertisements of new machinery, products and services accepted at the rate of $10.00 per column inch. Minimum space, one inch. Copy closing date, 10th of preceding month. *Checks must accompany all orders.*

AEROSOL MARKET IN THE EFTA

Well-known aerosol packer in Switzerland desires contact with U.S. firm considering contract-filling of their products, for sale in the EFTA countries.

Please write to Box 220, c/o Aerosol Age.

HELP WANTED:

AEROSOL FILLER REQUIRES GRADUATE PHARMACIST or M.S. in Bacteriology with laboratory experience to work in research, development and control section. Reply stating experience and salary required. Box 223, c/o Aerosol Age.

MISCELLANEOUS:

PUBLIC COMPANY, London, England desires American House who would be interested in associating in production of aerosols 5 to 10 million annually. Interested parties please write Box No. 224, c/o Aerosol Age.

Shulton Appoints Visor

The appointment of Frederick C. Visor as product manager of the Pharmaceutical Division has been announced by Shulton, Inc., New York. He will be responsible for "Ice-O-Derm," "Thylox" products and the development of new pharmaceutical proprietary products.

Prior to joining Shulton, Mr. Visor was advertising and sales promotion manager of veterinary products for the Agricultural and Laboratories Divisions of Charles Pfizer & Co. While with Pfizer he also served as manager of the Industrial Antibiotic Department of Technical Service, where he supervised the development and sales introduction of new antibiotic formulations. Prior to that, he was section manager of research and development for Publicker Industries.

EQUIPMENT FOR SALE

FOR SALE:

LIKE NEW—Aerosol pressure filler and crimper—by Mojonnier (hand operated) plus some supplies. Reply Box 221, c/o Aerosol Age.

SITUATIONS WANTED:

AEROSOL SPECIALIST: B.S., 32 years old, married, 10 years experience, 7 years experience in all phases of Aerosol sales, research, development and manufacture. Thoroughly knowledgeable in formulation, valve and container specifications. Capable of heading research, development and control department. Box 225, c/o Aerosol Age.

RESEARCH PHARMACIST with 5 years industrial experience including aerosol training and 1 year aerosol research and development desires research, technical service, liaison, or sales position in aerosol field. Original thinking a specialty (two patents pending). Married, 26 years old, willing to relocate (except Russia). Available immediately. Box 222, c/o Aerosol Age.

Century Names McLaughlin

Century Chemical Corp., New York producer of fine chemicals, intermediates, food additives, antibiotics, biologicals and veterinary supplies, has announced the appointment of Philip H. McLaughlin as general sales manager. He will be responsible for all phases of the company's sales and marketing activities, including planning, organization and coordination. Before joining Century, he was manager of the sales and technical service departments of Stauffer Chemical Co. Before that he was assistant export manager for Revlon.

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Spray Starch Introduced

Aerosol Corp. of America, Wellesley Hills, Mass., last month introduced a spray starch product as an addition to its aerosol product line. Called "Glis," the 14-ounce container sells for 79 cents.

Consumer Attitudes Studied

Today's consumer has a keener esthetic appreciation and responds more quickly to superior package design, Dr. Ernest Dichter, president of the Institute for Motivational Research, told a special panel discussion on consumer attitudes in San Francisco last month. The symposium was sponsored by Walter Landor & Associates, San Francisco industrial design organization, at the beginning of last month.

Dr. Dichter declared that the consumer is now better educated and more sophisticated. He knows what he wants and insists on relying on his own judgment, and his attitude toward advertising has changed (because of the television scandals) to one of skepticism. He said that the average consumer is ready to pay more if the quality story is presented properly, but that he expects the manufacturer to continually improve his product. Dr. Dichter pointed out that customers want to feel that they are in a partnership psychologically with a company whose products they buy. They want to be taken into the company's confidence and told why a new product is being introduced and why a new package design is being used.

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Ex CSMA President Dies

Moses M. Marcuse, board chairman of West Chemical Products Inc., Long Island City, N. Y., died June 20 at the age of 85. He was a founder and early president (1922) of the National Association of Insecticide and Disinfectant Manufacturers, now the Chemical Specialties Manufacturers Association. Mr. Marcuse joined West in 1903 as vice-president and became president in 1913.

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Dr. Moritz Dittmar Dies

Dr. Moritz A. Dittmar, supervisor of consumer relations in the quality control division of Lehn and Fink Products Corp., Bloomfield, N. J., died on June 20 at the age of 61. He helped establish the company's plants in France and South America.

Study Reveals Aerosol Strength of Retail Outlets

THE retail drug store, has lost some of its ground to supermarkets and house-to-house selling for some leading aerosol types, according to the "21st Survey of Beauty" conducted by Dell Publishing Co. among the readers of its women's magazines. Although the drug store was the preferred retail outlet for most of the 74 cosmetic and toiletry products covered by the study, of the three aerosol products covered only hair sprays were purchased most often in drug stores. Push-button toothpaste was purchased most often in supermarkets and other food stores and spray cologne was bought by most women from house-to-house salesmen.

The house-to-house seller, as typified in the aerosol field by Avon, Fuller Brush, and Stanley Home Products, accounted for the major losses suffered by the drug outlets over previous years. For instance, on 44 of the items, drug stores lost some ground, mostly to the house-to-house seller. Department stores also lost ground on 41 products, gained on 9. Food stores showed strong gains on 42 products, losses on 10. Altogether, house-to-house salesmen now are the leading outlet for 13 of the 74 products. A total of 4,196 women were queried for the survey results.

For the three aerosol products covered, the following answers were obtained:

Outlet	*Hair Spray*	*Push-button Toothpaste*	*Spray Cologne*
Drug Stores	40.6	32.9	22.4
Dept. Stores	11.6	6.3	15.6
Variety Stores	5.2	2.7	0.4
Food Stores	19.6	54.7	0.8
Mail Order	0.5	No Data	0.3
House-to-House	7.3	4.1	49.4
Beauty	8.1	No Data	0.7
Other	1.9	2.4	1.9

Finnish Group Elects Talvitie

Yrjo K. K. Talvitie, of Berner Oy, Helsinki, has been reelected president of the Finnish Aerosol Association (Suomen Aeroloiyhdistys r.Y.), and thus begins his third year as chief executive officer of the association. As new board members the following were elected:

Erkki Granroth
(Oy Printal Ab, Helsinki
S. Karkola
(Kesko Oy, Helsinki)
Erkki Sarviala
(Kasvinsuojelu Oy, Helsinki)
Bror Krth
(Oy Valkoinen Risti-Vita Ab)

At the same time as its announcement of election, the association announced that it will expand its promotion activities for aerosols at the consumer level. Among other projects, the association is considering a special aerosol exhibit at the Finnish Fair this year.

•

Aeroplast Ups Can Range

Aeroplast, Inc., Dayton, O. marketer of spray-on pharmaceuticals, last month announced that its clear surgical dressing is being made available in the 12-ounce size for surgery, the six-ounce for general utility, and the three-ounce for the doctor's bag.

•

DuPont Cuts Delrin Price

The Polychemicals Department of E. I. du Pont de Nemours & Co., Wilmington, last month announced a decrease in the price of Delrin of 8 cents per pound across the board. Truckload price of the base resin is now 80 cents per pound. Delrin is used in the aerosol industry for making containers and closures.

•

SCC Sets Europe Tour

The 1960 European tour and conference of the Society of Cosmetic Chemists will begin on August 19th and will include visits to nine European cities, according to Samuel Cohen, tour director. The trip will include the 1st Congress of Cosmetic Chemistry of the International Federation of Societies of Cosmetic Chemists, to be held in Munich, as well as other technical meetings and social functions arranged by societies in several cities.

Applications for membership in the 1960 tour, as well as copies of the tour plans, may be obtained from Samuel Cohen, Glyco Chemicals, 417 Fifth Avenue, New York 16.

•

Givaudan to Build in Spain

Givaudan-Delawanna, Inc., New York, last month announced construction of a new plant for Givaudan Iberica S.A. in San Celoni, Spain, 35 miles from Barcelona. Expected to be ready for production in about a year, the plant's initial production will include nitro musks, phenyl ethyl alcohol, cinnamic alcohol and aldehyde, citronellol, geraniol, hydroxycitronellal (and other derivatives of citronella oil), linalool and linalyl acetate (and other Bois de Rose derivatives), the ionones and methyl ionones, benzyl alcohol, benzyl benzoate, benzyl isoeugenol and other derivatives of benzyl chloride. According to Givaudan-Delawanna, objective of the plant is to assure a continuous supply of basic perfume materials to the growing aerosol, soap, perfume and cosmetic industry in Spain.

Xavier Givaudan will be board chairman of the new Spanish company, and Jose Valls Taberner (who is also president of Cros S.A., largest chemical producer in Spain) will be president. Salvador San de Acedo, a grandson of Mr. Givaudan, will be executive vice president and managing director. Andre Givaudan will be vice president, and J. Ravetllat will be sales manager.

Mr. Sanz is currently in the United States to study Givaudan's manufacturing, research and development. Prior to returning to Spain, he will also visit the Givaudan plant in Brazil to study methods and procedures there.

•

Herzka Visits Spanish Firms

A. Herzka, president of Pressurized Packaging Consultants, Ltd., London, and a frequent contributor to *Aerosol Age*, recently completed an extensive tour of the aerosol industry in Spain. He visited the plants and laboratories of most of the aerosol companies in that country.

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British Group Honors Guenther

Dr. Ernest Guenther, vice president and technical director of Fritzsche Brothers, Inc., New York, was honored by a special luncheon of the British Aromatic Compound Manufacturers Association at the Livery Hall in the Guildhall, London, on May 3. The next day Dr. Guenther delivered two lectures to the association, one entitled "Essential Oil Production in Various Parts of the World," the other "South American Essential Oils." After his lectures he was the guest of honor at a supper given by the executive committee of the association and was presented with a special leather-bound inscribed book.

Wintringham Joins Rexall

Arthur B. Wintringham has been named administrative director of the Chemical Division of Rexall Drug and Chemical Co., Los Angeles. Formerly associated with the Ethyl Corp. in Baton Rouge, La., he is a chemical engineering graduate of Rensselaer Polytechnic Institute. He will be located in the Los Angeles offices.

OVER THE TRANSOM

ACCORDING to all the editorial staff of this magazine can gather, three insecticides, one old and two newer ones, will undergo considerably more aerosol formulation work this fall and winter. The three are DDVP (which is the prize in a patent battle between Shell Chemical and Ciba), Wisconsin Alumni Research Foundation's "butonate," and Dow Chemical's "Korlan." During the next few months, look for a spate of technical articles reporting good aerosol performance results with all three of these materials.

* * *

Procter & Gamble's new "Lilt" aerosol home permanent may have enjoyed one of the largest television audiences in history for its sponsorship of the first half of the Annual Television Emmy Awards Program on June 20. And very wisely, we think the entire commercial portion of the program was devoted to singing the praises of "push-button" Lilt. Peter Lind Hayes and wife Mary Healy handled the commercials, and very well, too.

* * *

There were two interesting sidelights to the telecast. First, announcer Peter Lind Hayes played as a guest in the CSMA Golf Outing on Thursday, June 17, and also indulged in some gin-rummy playing after the golf. Second, Mike Nichols and Elaine May, comedian team which was to have headlined the entertainment for the telecast, was cut off because their skit poked fun at home permanents!

* * *

Pharmaceuticals Inc. last month dropped its name and went back to J. B. Williams Co., the name of a company it acquired back in 1957. Seems the "Williams" name is "older, more widely known."

"How's that for a nifty propellant?"

It was bound to come. Despite an apparent liking by women for men's aerosol shave creams, Helene Curtis is introducing a new pink "Plush" shave cream for women. Claimed to give a "complexion care," the product costs $1.35 plus tax. It is available at Gimbels in New York.

* * *

Rud Saacke, for four and a half years supervisor of the Bronx, N. Y. plant of G. Barr & Co., has become production manager of Powr-Pak for "Genial Ed" Helfer. Rud is a real veteran of the aerosol business, dating his production experience way back to the war years with Ted Heilig in Brooklyn.

Herb Kainig, of Dodge & Olcott (above), won a special award at the CSMA Golf Outing for high gross. Herb's lusty 164, though, is still ahead of the 181 scored by John de Elorza in the Fifth Annual Aerosol Industry Invitational Golf Tournament last August.

* * *

The CSMA's Aerosol Division, at the midyear meeting in Chicago, finally took some moves toward setting up some type of official liaison with the Federation of European Aerosol Associations. A special committee will study the problem of how to better work out an exchange of information. Fred Lodes will head the committee, which hasn't yet been named.

Lower your costs with hydrocarbon propellants

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We are fully equipped for high-speed filling of pressurized units utilizing hydrocarbons (propane, butane, etc.) as propellants *with consequent savings in your costs per package-unit.*

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This beautiful Arpege package dispenses its famous fragrance in a super-fine, breath-soft mist, produced by the Risdon Micro-Mist* valve.

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- ***Improved Product*** — Dilution effects can be minimized.
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- ***Improved, Ultra-Low Pressure Applications*** — Over a wider range of temperature and pressure.

For further information on the Micro-Mist as well as other Risdon valves and complete containers, send for this new, free "Aerosol Dispensing" booklet.

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NAUGATUCK, CONN.

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